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## PROFESSIONAL EDUCATION & TRAINING | RESEARCH ARTICLE

# Mentoring and early years practitioners: Investigating the influence of higher education qualifications and social support

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**Abstract:** The main purpose of this article is to study the influence of social support on mentoring provided and the moderating influence of having a higher education. This cross-sectional survey was based on a questionnaire that was sent to 435 employees from 29 preschools in Norway. A total of 284 responses were returned, a response rate of 65.3%. Three research hypotheses were formulated in order to answer three research questions. Confirmatory Factor Analysis was used to develop three measurement models and Structural Equation Modeling based on multi-group analysis was used to test the hypotheses. The results revealed that social support increase the occurrence of mentoring provided at work for employees with a higher education and that having a higher education moderates this relationship as compared to those without that education. Implications for practice, higher education, and the use of convenience sampling and self-reports are discussed, especially related to representativeness and reporting biases. This is an understudied area and no previous research has used a confirmatory approach to investigate how social support and higher education influence the occurrence of mentoring provided.



Torbjørn Waaland

### ABOUT THE AUTHORS

Torbjørn Waaland is an associate professor at the Faculty of Humanities and Education, University of Stavanger. He is engaged in issues concerning mentoring relationships and strategic school leadership. Together with his colleagues, he is also involved in school-related research projects, especially an increased use of mixed method design. In addition to research activities, Waaland is teaching students in educational psychology and supervising PhD students in quantitative research methodology. Furthermore, he gives courses across the country in mentoring, project management, and the use of information technology in order to control the progress of different projects. The present paper concerns an understudied area: how the role of providing mentoring to others was predicted by education level and the experience of social support from colleagues.

### PUBLIC INTEREST STATEMENT

Both newly appointed teachers and teachers that are more experienced are challenged by tasks that do not have an obvious answer. The research literature refers to this as a so-called practice shock. Social support that reflects the degree to which a job provides opportunities for advice and assistance from others can contribute to the reduction of the practice shock. The social support concept used in this article is similar to collegial social support that includes sharing friendships, personal problems, and confidences. The article revealed that a workplace characterized by social support could contribute to increased use of formal mentoring. Furthermore, preschool teachers have experienced academic mentoring as part of their education. Therefore, when experiencing social support, the higher education staff undertakes formal mentoring to a higher degree than employees without such education. Consequently, when formalizing mentoring relationships, preschools and educational institutions must emphasize a workplace characterized with social support.

**Subjects: Teaching & Learning - Education; Adult Education and Lifelong Learning; Higher Education; Primary/Elementary Education; Research Methods in Education**

**Keywords: social support; mentoring provided; higher education; confirmatory factor analysis; structural equation modeling**

### 1. Introduction

Research has shown that the way work is designed has an influence on peoples learning and development (Parker & Wall, 1998). Social support is characterized as a work design factor influencing both the academic training (Dougherty & Sharkey, 2017) and workplace learning (Cromwell & Kolb, 2004). Providing mentoring to others is a way of formalizing a workplace learning environment where one experienced person (mentor) transfer knowledge and skills to a less experienced colleague (protégé) (Kram, 1985).

The context of the present study is Norwegian preschools. Preschool teachers with a higher education are committed to provide mentoring to both children and colleagues. Teamwork characterized with social support is a central part of work division among employees in preschools. Studies have revealed a significant relationship between social support and mentoring (Hu, Wang, Yang, & Wu, 2014). Still, to the best of my knowledge, there are no studies investigating the influence of the job characteristic social support on mentoring provided. Therefore, the first aim of this study is to answer the following research question (RQ):

RQ1: What is the influence of social support on mentoring provided for employees with a higher education?

For many years, Norwegian preschools have had problems recruiting qualified preschool teachers with a higher education. Therefore, preschools are allowed to recruit employees without such an education into positions with a formalized responsibility of mentoring others. The current framework plan for preschools (NOU, 2011) also put an institutional responsibility for mentoring especially in their cooperation with the parents of the children. On this background, the second aim of this study is to answer the following research question:

RQ2: What is the influence of social support on mentoring provided for employees without a higher education?

Higher education for preschool teachers are obliged to educate teachers with a professional and formalized responsibility of providing mentoring to others (NOU, 2011). The main purpose of this education is to support future colleagues in their continuous qualification at work. Therefore, a third aim of this study is to answer the following research question:

RQ3: Does having a higher education moderate the relationship between social support and mentoring provided?

### 2. Theoretical framework

Based on the formalized mentoring relationships in preschools, mentoring can be an effective workplace learning strategy if mentors can spend the necessary time to support and transfer knowledge to the protégées in order for them to learn. A workplace mediated by mentors has the potential to assist novice teachers in their development of practical professional knowledge (Carter & Francis, 2001) and support teachers' professional learning (Shanks, Robson, & Gray, 2012). Moreover, job characteristics theory considers learning and development as outcomes of job design with the purpose of "role-taking" and "occupational socialization" of employees (Parker & Wall, 1998, p. 34). Based on this view, it can be assumed that social support will influence the role-taking of employees who provide mentoring to others, especially those with a higher education.

### **2.1. Mentoring provided**

The formalization of mentoring at work suggests that a mentor is a senior, experienced organizational member, who specifically helps a younger professional to develop their individual, technical, interpersonal, and political skills (Ostroff & Kozlowski, 1993). This definition clearly underpins how a formalized mentoring relationship can be seen as a job-function where mentoring is a formalized duty and performance and a way of organizing work into a job environment that combines productive work with learning (Head, Reiman, & Thies-Sprinthall, 1992).

In their review articles on international mentoring research, both Elkin (2006) and Haggard, Dougherty, Turban, and Wilbanks (2011) refer to empirical research that is mainly focusing the benefits of mentoring relationships. The benefit of providing mentoring to a protégé is an opportunity to make productive use of knowledge and expertise in middle age (Dalton, Thompson, & Price, 1977), to learn in new ways (McKeen & Burke, 1989), a desire to help others, and to build a competent workforce (Allen, Poteet, Russell, & Dobbins, 1997). Such studies clearly display the learning benefit that the provision of mentoring can have for organizations, but they also indicate the importance of motivating employees to assume formalized mentoring roles.

Previous research argues for more research into the relationship between work-related changes and mentoring relationships (Elkin, 2006; Haggard et al., 2011; McManus & Russell, 1997; Ragins, 1997; Walker, Kelly, & Hume, 2002). Haggard et al. (2011) gave the following recommendation for future research that is in line with the purpose of the present study: “We encourage researchers to consider how contextual factors, such as occupations and work settings, might constrain both the construct of mentoring and the experience of mentoring relationships for protégées and mentors” (p. 300).

### **2.2. Social support**

Deelstra et al. (2003, p. 324) defined social support at work as the “actions of others that are either helpful or intended to be helpful”, while Morgeson and Humphrey (2006) argued that social support reflects the degree to which a job provides opportunities for advice and assistance from others. The definition from Deelstra et al. (2003) includes a variety of interpersonal behaviors among workers such as mentoring, providing emotional support, and assisting others with assigned tasks. The definition of Morgeson and Humphrey (2006) describe social support as a social job characteristic independent upon the existence of formalized mentoring at work. Hill, Bahniuk, Dobos, and Rouner (1989) defined four types of workplace social support: Task support, career mentoring, coaching, and collegial social support. The social support concept used in this study is similar to collegial social support that includes sharing friendships, personal problems, and confidences. The influence of the job characteristic social support on mentoring provided has to the best of my knowledge, never been studied before. Still, research from other domains suggests that social support is critical for well-being and learning outcomes (Ryan & Deci, 2001; Wrzesniewski, Dutton, & Debebe, 2003).

Given the importance of support from colleagues and managers, collegial support (Hill et al., 1989) may be a type of workplace social support that can predict the occurrence of providing mentoring at work.

### **2.3. Higher education, social support, and mentoring provided**

According to Eby, Rhodes, and Allen (2007), youth, academic, and workplace mentoring are three distinct areas of mentoring scholarship, each of which corresponds to a different developmental stage. For preschool teachers, academic mentoring is based on the apprenticeship model of education, where a faculty member provides guidance and support mainly on academic issues. It is assumed that students benefit from academic mentoring relationships with teachers and faculty members (Tenenbaum, Crosby, & Gliner, 2001). Academic mentoring can lead to improvements in academic achievement, scholarly productivity, professional development, identity development, academic persistence, and psychological health (Johnson, 2007), among other things. Research on academic mentoring often presumes that the relationship is informal (Johnson, 2007), although

many mentorships develop out of formal advising relationships (Schlosser & Gelso, 2001). Based on their educational background it is expected that the job characteristic social support will influence the occurrence of providing mentoring to others for employees with a higher education. Therefore, in order to answer the first research question, the following hypothesis is formulated:

H1: The variability of social support at work will increase the occurrence of mentoring provided for employees with higher education.

Workplace mentoring involves a relationship between a less experienced individual (the protégé) and a more experienced person (the mentor), where the purpose is the personal and professional growth of the protégé (Kram, 1985). Mentors can also provide support behaviors that build trust, intimacy, and interpersonal closeness, such as offering acceptance and confirmation, counseling, and serving as a role model (Kram, 1985; Ragins & McFarlin, 1990). For years, schools in general and preschools in particular have attempted to increase educational quality through a variety of means. A main strategy has been the recruitment of preschool teachers with a higher education. Another strategy is the formulation and implementation of mentoring policies based on the widespread beliefs about the positive outcomes of mentoring. The provision of these support behaviors is associated with more positive work and career attitudes, greater career success, and lower intentions to leave the organization (Allen, Eby, Poteet, Lentz, & Lima, 2004). Larose et al., (2009) have shown that social and organizational support are associated with the decision to participate in mentoring programs. With the lack of formally educated preschool teachers, preschools have been dependent upon many uneducated employees in order to implement such mentoring policies. In order to answer the second research question, the following hypothesis was formulated:

H2: The variability of social support at work will increase the occurrence of mentoring provided for employees without higher education.

The relationship between higher education, social support, and mentoring provided is an understudied area. However, Bozionelos (2004) have shown that education level in general is positively related to mentoring provided. Furthermore, higher education was a significant covariate when studying the influence of problem-solving tasks on mentoring provided (Waaland, 2013). The following rationale is expected to support the assumption that teachers with a higher education to a greater extent will attend the role of providing mentoring to others, as compared to those without, when experiencing social support at work.

Preschool teacher candidates work closely with experienced teachers in internship sites during periods of their higher education. The experienced teachers will hopefully serve as role models when they provide social support and thereby promoting the students' future career as mentors. This is achieved when mentors help the students to learn new pedagogies and socializing them into the norms and standards of the preschool teacher profession. Ashburn, Mann, and Purdue (1987) support this view and argue that teacher mentoring means the establishment of a personal relationship for the purpose of professional instruction and guidance.

Based on this body of research, one would expect that a preschool teacher with a higher education, as opposed to those without this education, would provide mentoring to others to a greater extent when they experience social support at work. In order to answer research question three, the following hypothesis was formulated:

H3: Higher education will moderate the relationship between social support and mentoring provided. The expected form of the interaction is that respondents with higher education will report higher levels of providing mentoring when experiencing social support at work.

Two subsamples, one comprising respondents with a higher education and another subsample comprising employees without a higher education, will be used to address the previous hypotheses.

### 3. Methodology

#### 3.1. Sample and procedures

The present study invited 435 employees to participate. They came from 29 preschools in the south-western region of Norway. A total of 284 respondents participated in the survey, a response rate of 65.3%. Nine of the respondents did not answer the background variable about education level and were, therefore, excluded from the analysis. The sample ( $n = 275$ ) was divided into two subsamples, one consisting of employees without a higher education ( $n = 167$ ) and the other comprising those with a higher education ( $n = 108$ ). Among the respondents, the majority were females (94.2%), which is consistent with the argument that preschools usually generate more jobs for women. This is representative of Norwegian public statistics, which shows that 6–7% of people employed in the preschool sector are men (Statistics Norway, 2011). The average age of the respondents is 36.8 years ( $SD = 10.29$ ), with an average job tenure of 6.2 years ( $SD = 5.71$ ) and average years since education of 10.41 ( $SD = 10.13$ ). The sample includes employees representing all occupational categories in the preschool, such as top managers 6.2% ( $n = 17$ ), department managers 31.5% ( $n = 85$ ), educational personnel 4.8% ( $n = 13$ ), and operational personnel 57.2% ( $n = 158$ ). Top managers and department managers are responsible for organizing and implementing formal mentoring programs and must be educated as preschool teachers. Educational personnel are also preschool teachers, but without a formal leadership role. Operational personnel are responsible for child care and assisting the preschool teachers. The sample is based on a volunteer sampling approach where the employees were free to fill out the questionnaire. Such procedure involves drawing samples that are both easily accessible and willing to participate in a study. First, the questionnaire was tested in cooperation with three preschool institutions that did not participate in the main study. The purpose of the pilot testing was to ensure that the items, especially the translation into Norwegian of the international validated items, were unbiased and meaningful to the respondents. Second, the questionnaires were brought to the educational management of the 29 preschools and then distributed to all the employees.

#### 3.2. Measures

##### 3.2.1. Mentoring provided

The following four items were originally developed by Waaland (2013) and employed to assess the degree to which employees share their knowledge and take responsibility for the learning of others. The items are: “I tell my colleagues what they should learn at work”, “It is a part of my job to mentor my colleagues”, “Mentoring my colleagues is a natural way for me to work”, and “Learning at work makes me a better mentor for my colleagues”. Responses were given on a five-point scale ranging from “Disagree strongly” (1) to “Agree strongly” (5). Cronbach’s  $\alpha$  of the four-item scale was 0.85 and 0.83 for respondents with and without higher education, respectively.

##### 3.2.2. Social support

Four items from Morgeson and Humphrey (2006) were used to measure social support. One item was used to measure the management aspect of support: “My supervisor is concerned about the welfare of the people that work for him/her”. The other three items were used to measure support from colleagues: “I have the opportunity to meet with others in my work”, “People I work with take a personal interest in me”, and “People I work with are friendly”. Responses were given on a five-point scale ranging from “Disagree strongly” (1) to “Agree strongly” (5). Cronbach’s  $\alpha$  of the four-item scale was 0.64 and 0.70 for respondents with and without higher education, respectively.

#### 3.3. Data analyses

The descriptive statistics were examined using SPSS 18 program, while the data for testing the hypotheses were analyzed by means of structural equation modeling (SEM) using the Lisrel 8.80 program. Analyses of measurement models were conducted to evaluate the validity of the latent variables, whereas the relationship between the latent variables was analyzed in structural models. As suggested by Jöreskog (1993), the measurement models were estimated and evaluated

separately from the structural model. This makes it possible to deal with challenges of factorial problems before analyzing structural relations.

Before estimating the measurement model, confirmatory factor analysis (CFA) was applied to establish each latent factor as a construct reflecting the observed indicators. Initially, the simplest models of each latent constructs were tested. These analyses were based on the whole sample. Second, the factorial solutions were compared with the solutions from the two subsamples. Third, a more extensive measurement model was developed, including all the latent variables and their indicators. Finally, a structural model with social support as an exogenous independent variable and mentoring provided as an endogenous-dependent variable was estimated.

According to Jöreskog and Sörbom (2006), the multiple group procedure may be used to analyze subsamples. Measurement and factorial invariance were ensured by constraining comparable factor loadings to remain equal for the two groups, those with a higher education and those without. This multi group procedure was also used to investigate if and how higher education contributed to a difference in the structural models. The chosen analysis for the structural model represents multiple regressions with latent variables.

When conducting SEM, the analysis produces an estimated population covariance matrix based on the model specified. Covariance matrices were estimated by PRELIS 2 (Jöreskog & Sörbom, 1996b) and the Minimum Fit Function  $\chi^2$  was used to fit the models to the data. Models were accepted when the  $\chi^2$  was non-significant (Diamantopoulos & Siguaw, 2000). Changes in  $\chi^2$  were used to compare alternative nested models.

A key element of SEM is to assess whether the model produces an estimated matrix consistent with the sample matrix (Tabachnick & Fidell, 2007). This consistency is investigated through various measurement indices of goodness of fit, such as CFI, NNFI, RMSEA, and confidence interval.

The Comparative-Fit-Index (CFI) and Non-Normed-Fit-Index (NNFI) show goodness-of-fit-measures with values between 0 and 1, whereas values greater than 0.95 are indications of good fit (Jöreskog & Sörbom, 1988). In order to measure discrepancy per degree of freedom, The Root Mean Square Error of Approximation (RMSEA) was used. This measure is relatively insensitive to sample size (Jöreskog, 1993) and for interpretation purposes a value of about 0.05 or less indicates good fit, while a value of about 0.08 or less is an indication of “fair fit” (Browne & Cudeck, 1993). The 90% Confidence Interval (short: 90% CI) is reported together with RMSEA. Reporting confidence intervals is strongly recommended by MacCallum, Browne, and Sugawara (1996) because the interval shows how precise the RMSEA value reflects model fit in the population.

## 4. Results

### 4.1. Descriptive statistics

An examination of the intercorrelations of social support and mentoring provided together with demographic variables such as job position and education level showed that there is no problem with multicollinearity, which could represent multiple indicators of the same variable.

Prior to the CFA analysis, the mentoring provided and social support items were evaluated for univariate normality (see Table 1). Item means ranged from 2.62 to 4.62 for the total sample, from 2.32 to 4.56 for those without higher education, (Sample without HE) and from 3.08 to 4.72 for respondents with higher education (Sample with HE). Likewise, the standard deviation for the items ranged from 0.51 to 1.22, from 0.51 to 1.08, and from 0.45 to 0.96 for the samples, respectively. Means and standard deviations for the two samples with and without higher education demonstrate scores that reflect middle or undecided responses to statements on mentoring provided and higher responses to statements on social support. Furthermore, the descriptive analyses showed the extent of non-normality in the distributions for the mentoring provided and cognitive tasks items. Skewness

**Table 1. Descriptive statistics for four mentoring provided (MP) and four social support (SSUP) items for Total sample (N = 275), Sample without HE (higher education) (n = 167) and Sample with HE (higher education) (n = 108)**

Item	Total sample					Sample without HE					Sample with HE				
	M	SD	N	SK	KT	M	SD	N	SK	KT	M	SD	N	SK	KT
MP1	2.62	0.95	269	0.00	-0.64	2.32	0.84	163	0.02	-0.67	3.08	0.94	106	-0.36	-0.43
MP2	3.22	1.05	267	-0.46	-0.61	2.89	1.06	162	-0.16	-0.89	3.70	0.86	105	-0.96	1.08
MP3	3.08	1.22	268	-0.24	-1.02	2.53	1.08	161	0.24	-0.71	3.89	0.96	107	-1.44	2.26
MP4	3.11	1.20	267	-0.27	-0.89	2.57	1.07	161	0.13	-0.79	3.92	0.89	106	-1.17	2.02
SSUP1	4.62	0.51	271	-0.84	-0.58	4.56	0.55	163	-0.70	-0.64	4.72	0.45	108	-1.01	-1.01
SSUP2	4.38	0.65	268	-0.66	-0.20	4.36	0.65	162	-0.50	-0.67	4.42	0.66	106	-0.90	0.61
SSUP3	4.11	0.71	270	-0.35	-0.32	4.07	0.72	162	-0.42	-0.04	4.17	0.69	108	-0.23	-0.88
SSUP4	4.55	0.57	271	-1.08	1.47	4.55	0.51	163	-0.33	-1.57	4.57	0.61	108	-1.40	2.08

Notes: M = mean, SD = standard deviation, N = number of observations, SK = skewness, KT = kurtosis. MP1-4 and SSUP1-4: See Table 3 for formulated item statements.

(SK) measures the degree to which a cumulative curve approaches symmetry, while kurtosis (KT) is a measure of “peakedness” in a curve. Lei and Lomax (2005) specify that skewness and kurtosis values of 2.3 or below are unproblematic for confirmatory factor analyses and structural equation modeling. Absolute skewness and kurtosis values for the items in Table 1 were all below 2.3. Based on these results, the CFA models will use the robust maximum likelihood (MLR) estimator, which adjusts standard errors and model fit indices to account for non-normality in the data (Satorra & Bentler, 1994).

#### 4.2. Measurement models

All the CFA models were evaluated according to strength and significance of factor loadings, variance of the latent variables and error terms, and non-correlation of error terms.  $\chi^2$  and relevant fit measures for all the variables are presented in Table 2.

##### 4.2.1. Mentoring provided

A previous study (Waaland, 2013) has proven this variable valid and reliable. Four observed indicators were used to load on this latent variable. No error terms were freed up and the analysis revealed no particular problems of factorial validity. According to criteria suggested by Diamantopoulos and Siguaw (2000), the model provided a good fit to the data. (See Table 2).

##### 4.2.2. Social support

This variable has proved valid and reliable in earlier work (Morgeson & Humphrey, 2006). Looking at the four observed indicators of social support, it seems reasonable that the two statements regarding people’s friendliness and supervisor’s concern about the welfare of people have something in common which is not shared by the other indicators of the construct. Error terms of two indicators: “My supervisor is concerned about the welfare of the people that work for him/her” and “People I work with are friendly” were, therefore, freed up to correlate. According to criteria suggested by Diamantopoulos and Siguaw (2000) the model provided a good fit to the data. (See Table 2).

##### 4.2.3. Two-factor model

All the indicators of the two latent factors were analyzed in one extended measurement model using a multi group procedure (Jöreskog & Sörbom, 2006). Factor loadings were constrained to be equal across education level. However, the two latent variables were allowed to correlate and were not constrained to be equal across the two subsamples of respondents with and without higher education. According to Byrne (1998), allowing the error terms of the two factors to correlate could result in an over-fitted model. Still, with respect to social research, Byrne (1998, p. 126) recommends to include these parameters in the model specification due to theoretical assumptions. Therefore,

**Table 2. Fit index for CFA on the single latent factors and the two-factor model**

	$\chi^2$	df	CFI	NNFI	RMSEA	90% CI
Mentoring provided	4.16 ( $p = 0.39$ )	(4)	1.00	1.00	0.017	(0.00; 0.13)
Social support	3.43 ( $p = 0.33$ )	(3)	1.00	1.00	0.032	(0.00; 0.15)
Two-factor model	45.02 ( $p = 0.06$ )	(32)	0.99	0.98	0.055	(0.00; 0.089)

Notes: NNFI = Non-normed-fit-index; CFI = Comparative-fit index; RMSEA = Root mean square error of approximation, 90% CI = 90% Confidence interval for RMSEA.

**Table 3. Confirmatory factor analysis with latent variables mentoring provided and social support. Completely standardized metric**

*Mentoring provided*

(MP1) I tell my colleagues what they should learn at work	0.60*
(MP2) I mentor my colleagues when they need training at work	0.77*
(MP3) It is a part of my job to mentor my colleagues	0.84*
(MP4) Mentoring my colleagues is a natural way for me to work	0.85*

*Social support*

(SSUP1) I have the opportunity to meet with others in my work	0.69*
(SSUP2) My supervisor is concerned about the welfare of the people that work for him/her	0.69*
(SSUP3) People I work with take a personal interest in me	0.65*
(SSUP4) People I work with are friendly	0.89*

\* $P < 0.01$ . Note that the first path from each factor is fixed to 1. Fit index for Two-factor model: See Table 2.

**Table 4. Structural models for social support and mentoring provided**

Construct	Mentoring provided					
	Without higher education			With higher education		
	Unst.	SE	Stand.	Unst.	SE	Stand.
Social support	0.06	0.11	0.07	0.20*	0.13	0.24

Notes: Unst. = unstandardized coefficient; SE = standard error; Stand. = standardized coefficient.

\* $p < 0.05$  Fit index for Unconstrained structural model: See Table 5.

based on the theoretical concepts social support and mentoring provided, some error terms were freed up to correlate in order to achieve a two-factor model with fair fit. (See Table 2).

Standardized factor loadings were all above 0.60, and were significant at 1% level. The result supports the expectation of mentoring provided as a construct discriminate from social support. (See Table 3).

#### 4.2.4. Structural model

The structural model was employed to investigate whether mentoring provided is predicted by social support and whether having a higher education moderates this relationship. The fit indices for a model where structural parameters were constrained to remain equal across education level yielded a good fit to the data: (CFI = 0.99; NNFI = 0.98; RMSEA = 0.058, 90% CI (0.00, 0.094)). Also the alternative unconstrained model fitted the data well: (CFI = 0.99; NNFI = 0.98; RMSEA = 0.054, 90% CI (0.00, 0.091)). (See Table 5).

The unconstrained model allowed the regression coefficient to differ between those with and without a higher education. The estimates of non-standardized and standardized regression weights for the unconstrained structural model are presented in Table 4. The results are shown for

**Table 5. Fit index for CFA on the constrained and unconstrained factor model**

	$\chi^2$	df	CFI	NNFI	RMSEA	90% CI
Structural model - constrained	42.33 ( $p = 0.05247$ )	(29)	0.99	0.98	0.058	(0.00; 0.094)
Structural model - unconstrained	39.19 ( $p = 0.07793$ )	(28)	0.99	0.98	0.054	(0.00; 0.091)

Notes: NNFI = Non-normed-fit-index; CFI = Comparative-fit index; RMSEA = Root mean square error of approximation; 90% CI = 90% confidence interval for RMSEA.

employees without and with a professional preschool teacher education, respectively. These results support the hypothesis (H1) that social support has a positive and significant influence on mentoring provided for those with higher education. However, the results does not support the second hypothesis (H2) that social support also has a positive and significant influence on mentoring provided for those without higher education.

As expected, both the constrained and unconstrained structural model had non-significant  $\chi^2$ . However, a  $\chi^2$  difference test (see Table 5) shows that the unconstrained solution gave a significant improvement in goodness of fit,  $\Delta\chi^2(1) = 3.14, p = 0.02546$ . This supports the hypothesis (H3) that higher education moderates the influence of social support on mentoring provided ( $p < 0.05$ ).

### 5. Discussion

By dividing the sample into two subsamples, employees with and without higher education, the aim of the present study was to investigate whether both subsamples revealed a significant influence of social support on mentoring provided. Another aim was to investigate whether the relationship between social support and mentoring provided is moderated by professional teacher education. Two of three hypotheses were supported.

First, the present study is based on a theoretical approach where mentoring as a learning environment can be seen as an outcome of the job characteristic social support. Since the structural model gave support for the first hypothesis, there is reason to believe that providing mentoring to colleagues is more probable when preschool teachers with higher education are experiencing social support at work. This view is supported by previous research on mentoring (Bozionelos, 2004; Waaland, 2013) suggesting that educational level can affect perceptions of the mentoring processes. Bridgeford (2007) refer to the positive effects of mentoring when many organizations have adopted formal mentoring programs hoping to cultivate meaningful developmental relationships. In Norwegian preschools, preschool teachers have been trained to develop formal mentoring relationships based on guidelines that outline how relationships are formed and the roles and responsibilities for those involved. Noe (1988) argues that through such relationships with others in the work environment, individuals receive social support. Social support together with mentoring means the assistance derived from personal relationships that involve frequent interactions and strong positive feelings. Ragins and Cotton (1999) argued that mentoring can develop naturally (informal mentoring) or occur as part of an organizationally sanctioned formal mentoring program. The latter type of mentoring often targets employees who are identified as having high potential for career advancement (Eddy, Tannenbaum, Lorenzet, & Smith-Jentsch, 2005), for example, professionally educated preschool teachers.

Second, the present study did not give support for the second hypothesis indicating that social support also influence the occurrence of providing mentoring to others for employees without a professional preschool teacher education. This hypothesis was based on a theoretical assumption that public educational institutions such as preschools have an institutionalized responsibility for mentoring through formalized mentoring programs and policies. For example, employees with a leadership position without the professional education have the obligation to mentor others because the preschools have to follow political legislations (NOU, 2011). International research has shown that relationships with peers and managers have been found to facilitate organizational

socialization, help in coping with job stress and work demands, and aid in personal and professional development (Feldman & Brett, 1983; Kram & Isabella, 1985; Levinson, Darrow, Levinson, Klein, & McKee, 1978; Lewis, Posner, & Powell, 1983). On this background, it is relevant to ask why the second hypothesis did not give significant result. According to Fisher (1985), one reason could be that the positive effects of social support may occur only for individuals who value relationships with others at work. Professional preschool teacher education involves such team-based training. Henderson and Argyle (1985) argue that individuals who perceive work relationships as being superficial and task-oriented are more likely to seek social support from individuals outside the formal work environment. Kram (1985) supports this view and argues that if the protégé does not believe that interpersonal relationships can be valuable for personal and professional development, it is likely that he/she will not be receptive to the mentor's influence attempts.

Third, the results gave support for the third hypothesis that higher education moderates the relationship between social support and mentoring provided. A study by Campion and Goldfinch (1983) reveals that the level of education may be positively related to the willingness to mentor others. According to Jacobi (1991), individuals who have participated in higher education may be more familiar with mentoring because many colleges and universities have implemented mentoring programs as part of a professional education. Rots, Kelchtermans, and Aelterman (2012) revealed that positive experience with mentors during teacher education was a powerful source of self-esteem for future job entrance as teachers and mentors (p. 7). Within the context of Norwegian preschools, it could be expected that experience with mentoring in higher education can influence perceptions and attitudes to mentoring. Empirical research has revealed the importance of workplace mentoring as a supportive strategy for beginning a new job because early career teachers had difficulties in the transition to teaching (Hobson, Ashby, Malderez, & Tomlinson, 2009; Howe, 2006; Ulvik, Smith, & Helleve, 2009; Wang, Odell, & Schwille, 2008). In sum, the previous research is a powerful argument that the influence of social support on mentoring provided is a relevant description for workplaces such as Norwegian preschools where preschool teachers have a duty and obligation to establish supportive mentoring strategies.

## **6. Implications for preschools and higher preschool teacher education**

As mentioned earlier, Parker and Wall (1998) argue that changes in job characteristics, such as social support, can affect an employee's "role-taking at work". (p. 35). The role-taking aspect of job design is best illustrated through the increased use of formalized mentoring roles. In a way, work in preschools is continuously redesigned when the mentoring role of a preschool teacher or educational manager has to be combined with other tasks that are necessary to run the organization. From a formal perspective, preschool institutions are relatively hierarchical in the sense that managers, both at the top and at the departmental level, have the main responsibility for managing the educational and mentoring processes taking place in the organization. Therefore, new preschool teachers are expected to experience a better transition into a new job when they meet experienced leaders who serve as role models when they combine their mentoring role with a supportive and friendly attitude.

The previous discussion is also relevant for the content and organization of preschool teacher education. This education is based on public legislations which indicate a body of knowledge and skills that students need to acquire and produce during their practice periods and exams. However, this training is insufficient if they do not experience academic mentoring relationships combined with social support. Since preschool teachers will serve as mentors for children, it is vital that they themselves meet supportive mentors in their own academic and workplace mentoring relationships.

## **7. Limitations of this study**

The present study has several limitations. First, its main limitation is related to the way the sample has been drawn. External validity is closely related to the sampling procedure. Cook and Campbell (1976) define external validity as an effort to generalize across times, settings, and individuals. As pointed out by Sackett and Larson (1990), this is the type of validity that is nearest to a definition of

generalizability. Within mentoring studies, Scandura and Williams (2000) argue that external validity relies upon “establishing a true representation of the relationship between two constructs and establishing that the relationship is generalizable to different populations, measures and circumstances” (p. 1252). If the purpose of the study was to make generalizations, Deming (1950) argued that a non-random approach based on convenience sampling is problematic since biases and sampling errors cannot be calculated from the sample, but instead must be settled by judgment. In contrast to the criticism by Deming (1950), other researchers argued that if the goal is to learn about or improve a specific process or system, convenience samples are not merely the most convenient and economical approach, but are also technically and conceptually the most appropriate one (Highhouse & Gillespie, 2008; Perla & Provost, 2012). Still, in order to avoid unspecifiable biases and in order to consider representativeness, future studies should be based on a randomized sampling procedure.

A second limitation is that self-reports can be exposed to reporting biases (Podsakoff & Organ, 1986). For instance, respondents have a tendency to increase the importance of their own role compared to that of others, and thereby overestimate the function of providing mentoring. Still, self-reports is well-established in the study of mentoring relationships (Bozionelos, 2004; Waaland, 2013). It is, thus, reasonable to use employees themselves as informants when intentions and behavior of providing mentoring are included in the survey statements.

Third, gender was expected to be a covary of the analyses. In order to avoid identifying males in the 29 preschools, the collected questionnaires were not allowed to be clustered. A cluster analysis would make it possible to investigate if the differences of the mean on the individual level were explained by mean differences between preschools. If this does not correspond, it would be a problem to draw conclusions on the individual-based analyses.

Finally, it is important to bear in mind that predictive power from social support to mentoring provided does not confirm that the predictor causes the outcome variable. A cross-sectional design such as this does not allow for statements on effect or causality. This implies that any causal suggestions are preliminary and based on theory and previous empirical research. Further cross-sectional studies are recommended and the need to obtain longitudinal data in order to document causal relationships between the exogenous and endogenous variables. Future studies should also investigate the factor structure of the variables based on larger samples.

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