

GENDER VARIATIONS IN NORWEGIAN PRE-SERVICE TEACHERS' MOTIVATIONAL ORIENTATIONS

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Abstract

Pre-service teachers' gender and its associations with motivational orientations are under-researched issues. This study, therefore, used a survey methodology to research gender variations in the motivational orientations of pre-service teachers in general. The research clearly shows that male pre-service teachers are less motivated than their female counterparts and have higher levels of disillusion motivation. Female pre-service teachers are more influenced by teacher role models and show higher levels of intrinsic motivation and self-efficacy in classroom management. Males seem to internalize external academic pressure to a lesser extent. Further research is needed to better understand these significant findings. The conclusion is that interactions between gender and pre-service teachers' motivational orientations need to be further explored and explicitly addressed by teacher educators.

Key words: pre-service teachers, gender; motivational orientations; self-efficacy.

Introduction

The rationale behind the present study is that teacher education programmes in Norway, as in many other countries, exhibit a substantial student dropout rate: there is substantial leakage from teacher education; consequently, it has been predicted that there will be a significant shortfall of teachers within a few years (Roksvaag & Texmon, 2012). Males are under-represented as students in teacher education, especially in programmes qualifying teachers for the lower grade levels (Føljegruppen, 2013). Studies also show that male teachers are more likely to move out of the teaching profession early in their careers (Tiplic et al., 2015). The purpose of this study was therefore to determine whether there are significant gender differences in motivational orientations among student teachers. These motivational orientations may be important driving forces behind learning outcomes and study success, the future quality of the teacher's professional work, and the stability of the early-career teaching workforce.

In general, the importance of gender with respect to teachers' motivations is a controversial issue in education (Klein et al., 2014). Gender differences in teachers' attitudes and motivation have been a subject of debate for several decades: of particular controversy is the suggestion that female teachers express more feelings and soft values than do male teachers (Arnot & Dillabough, 2000; Heward & Bunwaree, 1999). Gender issues in teacher education have received much less attention than other issues in this context (Campbell & Sanders, 1997;

Darling-Hammond, 2012). Few scholars have investigated the importance of pre-service teacher gender with respect to motivational orientations. Until present, gender research has not been able to uncover clear differences in the motivation of male and female pre-service teachers. This study used a survey methodology to investigate gender variations in pre-service teachers' motivational orientations.

Teaching is, in nature, imbued with gender; therefore, gender issues are of importance in teacher education (Darling-Hammond, 2012). Globally, there remain wide disparities between men's and women's participation in teacher education. This is also the reality in Norway. In 2013, three out of four teacher education/general education students in Norway were female (Statistics Norway, ssb.no). Female teachers, in particular, serve as role models for female learners, and male teachers serve as role models for male learners. Learners therefore need teachers of both genders. In 2013, only one fourth of the primary and lower secondary school teachers in Norway were male, and one half of the high school teachers were male (Statistics Norway, ssb.no). Among 93 countries, Norway ranks at the top on gender empowerment measurement (UNDP, 2007) and can be characterized as one of the most "gender-equal" societies in the world. However, despite this standing, there may be complex gender differences in motivation, interest, and self-discipline among pre-service teachers. This study addresses the potential influence of pre-service teacher gender on motivation in a Norwegian gender-equal societal context.

The term "gender" is used when considering differences between the educational experiences of males and females. However, in gender theory, a distinction is made between biological sex and social gender (Glasser & Smith, 2008). It is argued that certain personality traits (e.g., self-discipline, altruism) vary significantly among persons of the same biological sex and that gender is socially constructed rather than primarily determined by biology. Hence, it may be more reasonable to focus on the notion of a social gender. Nevertheless, in this research the focus is on the biological gender of pre-service teachers.

In the present study, the concept of motivational orientation is understood in a broad sense; that is, several distinct motivational sub-dimensions, such as intrinsic motivation, achievement goal motivation, altruistic motivation, and disillusion motivation, are applied, as well as those concepts linked to motivation: self-efficacy, affective commitment, organizational citizenship, and inspiration from role models. Motivational orientation, in a narrow sense, defines the source of motivation for an individual to perform a particular action and can originate either from internal desires (e.g., altruism) or external factors (e.g., extrinsic goals). There is a perceived continuum between intrinsic motivation and extrinsic motivation (Ryen & Deci, 2000). A person's behaviour is associated with situations in which the pre-service teacher is exercising his profession. Self-efficacy denotes experiences of mastery during, for instance, teaching practice among pre-service teachers (Bandura, 1997). Self-discipline can be understood as a more-or-less permanent personality feature of an individual (Tangney, Baumeister & Boone, 2008). No one, however, is completely locked into a personality; with the exception of quite extraordinary situations, everyone has options and, as such, the opportunity to change their own patterns of behaviour. Self-discipline can thus be regarded as a force within each individual that is significant for the ability to complete a desired undertaking (Tangney, Baumeister & Boone, 2008). Affective commitment refers to the students' emotional attachment to, and their identification with, the teaching occupation (Allen & Meyer, 1990; Geer, 1966; Meyer & Allen, 1997). For instance, an individual may have positive feelings about the thought of becoming a teacher one day—may be looking forward to beginning in the teaching profession (van Veen, Slegers, & van de Ven, 2005). All these factors are included in motivational orientations in the broad sense that is applied.

Problem of Research

The research problem is as follows: Are there significant gender differences in pre-service teachers' motivational orientation? The research aims to explore the statistical associations, in a broad sense, between pre-service teachers' gender and their motivational orientation, i.e. several distinct motivational sub-dimensions, such as intrinsic motivation, achievement goal motivation, altruistic motivation, and disillusion motivation, as well as those concepts linked to motivation: self-efficacy, affective commitment, organizational citizenship, and inspiration from role models.

Research Focus

A person's mental processes start with a motivational state. Research distinguishes motivational processes from self-discipline processes (Kuhl, 1985). Moreover, a distinction has been made between intrinsic motivation and other forms of motivation: *intrinsic motivation* has no special purpose, in the sense that the activity is carried out for the activity itself, while *extrinsic motivation* is an instrumental activity in order to set goal. Achievement goals are those that drive the learner to achieve. *Achievement goal motivation* is a concept that is concerned with comparing one's own performance with that of others (Pintrich, 2000). All behaviour is associated with some form of motivation, and pre-service teachers might have different sorts of motivational leanings. Intrinsic motivation is a term Ryan and Deci (2000) used to describe motivation inspired by gratification. The authors consider intrinsically motivated behaviour as a volitional engagement in activities based on interest and spontaneous satisfaction. Since personal satisfaction is related to intrinsic motivation (Davies & Wilson, 2009), one can argue that these students find teaching rewarding and that they also find satisfaction in helping and personally contributing to the field of education and/or within the context of their practice. It is therefore expected that intrinsic motivation will be associated with gender and that female pre-service teachers may have stronger intrinsic motivation than do male pre-service teachers (Lambert, 1991).

Achievement goal motivation is a motivation that originates in a need to be respected by others, to be regarded as a skilled person, and, more generally, to be valued by the social environment. It has been proposed that teachers (and therefore also pre-service teachers) have a genuinely held desire to work with other people, to help students who need a teacher's assistance, and the like. This can be called an altruistic motivation for a future teaching career. Altruistic motivation among pre-service teachers is identified as a distinct motivation (Heilman & Chen, 2005; Roness, 2011): in other words, a personality characteristic of pre-service teachers is the wish to be perceived as good role models through a future teaching career, and this, too, will generate altruism towards fellow students. The phenomenon of pre-service teachers helping their co-students, even though they (strictly speaking) have no formal responsibility in this area, is known as *citizenship behaviour*. These motivational categories are rooted in a driving force in the individual that can lead to action, whether the motivation for doing so is regarded as intrinsic, extrinsic, or altruistic. To study whether these motivational categories vary by gender is of interest because gender equity does not exist among teachers. Furthermore, teacher-education institutions place external academic pressure on the students; that is, they make demands in terms of coursework and provide assignment feedback. This article explores whether students' perceptions and internalization of external academic pressure vary by gender. All these motivational categories may be important driving forces behind study success and learning outcomes, and behind the future quality of professional work as teachers in schools as well as the stability of the early-career teaching workforce.

Bandura (1997) introduced the concept of self-efficacy beliefs as an assessment of a person's capabilities to attain a desired level of performance in a given endeavour. The author assumes that the belief in one's abilities is a powerful driving mechanism influencing the motiva-

tion to act, the effort put forth in the endeavour, and the persistence of coping mechanisms in the face of setbacks. Many pre-service teachers have no professional teaching experience before beginning their teaching practice. Therefore, there may be uncertainty attached to a student's belief in her or his own classroom management skills; in other words, in the ability to maintain discipline and cope with even the most aggressive children whilst attaining positive awareness from the students. This is termed "self-efficacy in relation to classroom management" and "self-efficacy in relation to student engagement."

Bandura proposed four major influences on self-efficacy beliefs: mastery experiences, verbal persuasion, vicarious experiences, and physiological arousal. The most powerful influence is mastery experiences, which, for pre-service teachers, are actual teaching experiences with students. Self-efficacy beliefs are raised if a pre-service teacher perceives her or his teaching achievement to be a success, which then contributes to the expectations that future performances will likely be proficient. An increase in pre-service teacher self-efficacy may result in greater effort, but lower self-efficacy beliefs result in decreased motivation (Guskey, 1988; Ross, 1998; Tschannen-Moran et al., 1998).

Vicarious experiences are those in which the target activity is modelled by other persons, for instance, a supervisor of a pre-service teacher or another role model. The impact of the modelled achievement on the pre-service teachers' self-efficacy beliefs depends on the degree to which the pre-service teacher identifies with the model. The role models in socialization have their background in role theory (Merton, 1957), but the idea that pre-service teachers are seen as "role models" to young people has meagre empirical support (Carrington & Skelton, 2003; Hutchings et al., 2008). However, Martin and Marsh (2005) found that girls, in fact, rate their relationships with female teachers better than they rate their relationships with male teachers. When a role model with whom the pre-service teacher closely identifies performs well, the self-efficacy of the pre-service teacher is enhanced. Research on pre-service teachers' self-efficacy indicates that factors such as self-perceptions of instructional competence, personal characteristics (Poulou, 2007), emotional and pedagogical support from fellow pre-service teachers, and the pre-service teacher education programme (Tschannen-Moran, Hoy, & Woolfolk, 2007) contribute to teaching efficacy.

What is termed *study absorption* is just such behaviour, which can be associated with extraordinary energy in situations during on-campus study periods and during situations that arise during teaching practice. In this context, absorption denotes a pre-service teacher's energy (Schaufeli, Bakker, & Salanova, 2006). It is proposed that such energy is influenced by the balance, in education, between challenges and the ability to handle those challenges. If this balance is good, it is associated with the phenomenon of flow (Csikszentmihalyi, 2000).

The concept of disillusion motivation, denoting a feeling that the teaching profession is worth investing in as a future career can, however, arise during teacher education. This possible intention to leave the teaching profession may be related to the ways in which pre-service teachers perceive the expectations associated with a practicum experience. Since pre-service teachers are to take over the teaching work of their supervisors for a period, they will experience time pressure. Even though pre-service teachers have fewer hours of teaching per week of practice, a lack of experience can heighten the perception of time pressure and workload. One must therefore explore whether disillusion motivation is related to gender.

Teacher education in most national systems is a rather complex programme consisting of a degree in an academic subject (such as mathematics, chemistry, physics, etc.) and pedagogic education, which, in a more direct sense, prepares the student for professional life within a school context (Darling-Hammond & Lieberman, 2012). In Norway, there are two types of programmes typically offered by university colleges and three university programmes in teacher education. University college programmes qualify students for teaching either Grades 1–7 or 5–10. Both these programmes are based on a campus-based teacher education model: theories are introduced on campus and afterwards applied in schools. These programmes are also offered by some of the newer universities that used to be university colleges. However, for simplicity,

we refer to them here as “university college programmes.” These programmes are, and will be until 2017, 4-year integrated academic degree programmes (planned to be re-shaped as 5-year master programmes in 2017). Universities mainly have three teacher programmes; firstly, students apply for a 5-year integrated programme in which students apply for a subject orientation (e.g., history, Norwegian, science) which is taught over the 5 years. Secondly, students take on a 1-year teacher education course after finishing subject-oriented bachelor’s and master’s degrees. Thirdly, “Teach First” is a 2-year specially designed programme for carefully selected candidates (Nesje, 2014). The campus-based teaching is reduced in this programme, and the responsibility of the schools for the practice-based element of teacher education is correspondingly increased. The pre-service teachers take full responsibility for a classroom after a 6-week summer course. However, they have ongoing (and close) supervision during their practicum.

Methodology of Research

General Background of Research

The reported analysis is part of a research project in which Norwegian pre-service teachers’ preferences (such as motivation, self-discipline, and perceived support from supervisors) are examined. During spring and autumn 2013 a questionnaire survey was distributed to Norwegian pre-service student teachers in selected institutions (university colleges and universities) and enrolled in the following programmes:

1. one-year undergraduate teacher education programme for candidates with a vocational or general academic educational background
2. integrated 5-year senior-teacher education programme at university
3. primary teacher education programme (for teaching in Grades 1–7)
4. primary/secondary teacher education programme (for teaching in Grades 5–10)
5. general teacher education programme (for teaching in Grades 1–10, i.e., the old model)

Data collection was carried out in two ways: (1) Students following the senior-teacher programme and the teacher education programme at a university, as well as primary/secondary/general pre-service teacher students at a university college, were given the paper-based questionnaire during obligatory seminar teaching. The students were informed that participation was voluntary and that they could withdraw from the survey at any point. None of the students who were present declined to take part in the survey, and the response rate was 100%. (2) The other part of the sampling procedure was based on a snowball strategy for sampling: students at four Norwegian university colleges with primary/secondary/general teacher programmes took part in an electronic questionnaire. The researchers were given the email addresses of the pre-service teachers by the teacher-education institutions and sent the electronic questionnaire to these email addresses.

Sample of Research

635 students responded to the survey. The analysis is based on 432 responses after the removal of respondents with missing values. It is not possible to estimate the exact response rate within this sample due to the fact that a number of the students at two institutions were not users of the institution-allocated email addresses. However, a comparison of available background variables shows that this sample as a whole is well aligned with the characteristics of the general population of pre-service teachers at the university and university colleges in Norway.

Instrument and Procedures

A questionnaire was constructed based on measurement instruments previously reported in the literature (see table 1), as well as on new developments of constructs (Haladyna & Rodriguez, 2013). In the survey, the pre-service teachers responded to items on a seven-point Likert scale in which the alternative “four” represented a neutral midpoint. The concepts were measured with two to four single items. The analysis reported in the following is based on 12 measurement instruments.

Table 1. Overview of constructs, items, and Cronbach's alpha (N = 432).

Concepts and Indicators	Cronbach's alpha
Affective commitment (Adapted after Allen, & Meyer, 1990) I feel attracted to the teaching profession. It feels good to think that one day I will be a teacher. I am looking forward to working as a teacher.	.88
Self-efficacy in student engagement (Adapted after Skaalvik and Skaalvik, 2007) To what extent will you as a future teacher: • manage to motivate those students who show little interest in school work? • manage to get the students to believe that they can actually do well in school? • manage to get the students to be ambitious?	.82
Self-efficacy in classroom management (Adapted after Skaalvik and Skaalvik 2007) To what extent will you as a future teacher: • manage to tackle the most troublesome students? • manage to get the students to follow school rules? • manage to calm down noisy students?	.72
Study absorption (Schaufeli, Bakker & Salanova, 2006) I am so captivated by my studies that I almost forget the things around me. I find it difficult to tear myself away when I get involved with reading study texts. I feel full of energy when I am working on my studies.	.82
Self-discipline (Tangney, Baumeister & Boone, 2008) I generally complete study assignments in plenty of time before deadlines. Even though I allocate time for studying, I nevertheless don't manage to get it done (reversed). I often put off the things I have to do until the last minute (reversed).	.81
Intrinsic motivation (adapted after Vallerand, Pelletier, Blais, Briere, Senecal & Vallieres, 1992) I want to be a teacher because: • I want others to be interested in learning. • working with children and young people is meaningful.	.71
Achievement goal motivation (adapted after Archer 1994) It is important to me: • to be looked up to by the other students. • to be described as the best in the study group.	.78
Altruistic motivation (adapted after Roness, 2011) It is important to me: • to work with people. • to help people who need it.	.77
Organizational citizenship (adapted after Elstad et al., 2011) I freely help other pre-service teachers with teaching-related questions. I help other pre-service teachers even though it is not strictly my responsibility.	.89
Inspiration from role model (inspired by Haladyna & Rodriguez, 2013) I have had teachers who are role models for me. I want to be a teacher because I was inspired by good teachers that I have had.	.84
Disillusion motivation (Kuvaas, 2007) If I find a well-paid job after my teacher training, I will not work as a teacher. I often think about career possibilities other than the teaching profession. If I could go back and choose afresh, I would have chosen something other than teacher training. Other careers are more attractive to me than the teaching profession.	.89
External academic pressure (inspired by Haladyna & Rodriguez, 2013) The study requirements in teacher studies are more difficult compared with those in high school. Compared with high school, I have to use more time to keep up with teacher studies.	.82

The internal consistency (Cronbach's alpha) for each of the concepts is satisfactory (between .71 and .89). The indicators and Cronbach's alpha (α_c) for each concept are presented in Table 1. The Cronbach's alphas were estimated with IBM SPSS 22.

Data Analysis

Twelve bivariate OLS-regression models were estimated with IBM SPSS 22. The dependent variable (the concepts) changed for each new model while the independent variable (gender) was the same. Both unstandardized and standardized coefficients are used to indicate the strength of relationship between the concepts and gender. For all twelve regression models the significance level was set to .05.

Results of Research

Table 2 shows results from bivariate regressions with the different motivational constructs as dependent variables and gender as an independent variable.

Table 2. Bivariate regression; bold coefficients statistically significant at a 5% Level (N = 432).

Dependent Variables	Gender ¹⁾	
	b	Beta
Affective commitment	-.15	-.06
Self-efficacy in student engagement	-.06	-.04
Self-efficacy in classroom management	-.18	-.10
Study absorption	-.13	-.05
Self-discipline	-.21	-.06
Intrinsic motivation	-.33	-.16
Achievement goal motivation	-.06	-.02
Altruistic motivation	-.49	-.27
Organizational citizenship	-.05	-.01
Inspiration from role model	-.40	-.10
Disillusion motivation	.47	.14
External academic pressure	-.46	-.14

¹⁾ Female = 0 and Male = 1

Table 2 shows six statistically significant relations. Female pre-service teachers report higher levels of self-efficacy in classroom management, stronger intrinsic motivation, and stronger altruistic motivation. The female students also report a stronger influence from teacher role models, and they have a stronger perception and internalization of external academic pressure. Male students report a level of disillusion motivation that is significantly higher than that of the female students. Regarding affective commitment, self-efficacy in student engagement, study absorption, self-discipline, achievement goal motivation, and organizational citizenship, no statistically significant differences between the genders were established. Control variables were assessed and tested without finding any significant effects.

Discussion

The results of the study clearly show that male pre-service teachers are more disillusioned than female teachers. It is not surprising that male beginning teachers have a higher rate of turnover intention than female beginning teachers (Tiplic et al., 2015). Higher attrition rates among male teachers versus female teachers may contribute to a higher gender imbal-

ance, which presents a problem since male students, especially, also need male teachers as role models. Furthermore, female pre-service teachers are more strongly inspired by role models than male teachers. A possible explanation is the gender imbalance in favour of female teachers present in schools.

The results show that male pre-service teachers report several motivational orientations significantly different from female pre-service teachers. As expected, female pre-service teachers show levels of altruistic motivation that are higher than those of male teachers. Their perception and internalization of external academic pressure is also stronger. However, when it comes to citizenship behaviour among fellow students, no significant gender difference was found.

Female pre-service teachers show levels of intrinsic motivation that are higher than those of male teachers. Regarding the constructs of achievement goal motivation, study absorption and self-discipline, no significant gender differences were found. A significant gender difference was found regarding self-efficacy in the classroom management construct, but there were no significant gender differences regarding self-efficacy in student engagement and affective commitment to work as a teacher. The significant gender difference with respect to the self-efficacy in classroom management construct may be regarded as rather surprising. Klassen and Chiu (2010) found that female teachers had greater workload stress, greater classroom stress resulting from student behaviours, and lower levels of classroom management self-efficacy than male teachers, while Riggs (1991) found the same tendency among science teachers. Stress among pre-service teachers during their practicum is a likely topic for further research. Gender equity among teachers is important because teachers are role models for students. For this reason, it is important to better understand what motivates pre-service teachers.

This study contributes to the understanding of factors influencing pre-service teachers' motivational orientations through the identification of several gender differences pertaining to motivational constructs, such as altruistic motivation, disillusion motivation, and intrinsic motivation. Also identified were gender differences linked to pre-service teachers' efficacy and perceived academic pressure during teacher education.

There are several practical implications for the present study. First, by acknowledging the vulnerability of pre-service teachers and taking their motivational orientations and concerns seriously during practicums, school supervisors may strengthen their pre-service teachers' motivation for sustaining their study efforts during teacher education in order to prevent disillusion motivation. Better support during practicum and more thorough explanations of the expectations related to pre-service teachers' diverse roles to increase their school knowledge may reduce disappointments and dissatisfaction during practicum and campus studies. Therefore, we suggest that a well-functioning system of supervising support per se is important for reducing pre-service teachers' disillusion motivation. The present study does not account for several factors that may be important antecedents of pre-service teachers' motivational orientations. Further research should examine whether internal school-factors influence disillusion motivation. Longitudinal research, as well as multilevel analyses, may help to address the complex interactional dynamics between contextual or organizational factors, individual characteristics, and disillusion motivation. Qualitative research may contribute to a better understanding of the relations between disillusion motivation and organizational factors during practicum, as well as additional factors that the quantitative research has overlooked.

In Norway, as in many other European countries, there is a substantial student dropout rate in teacher education programmes (Føljegruppen, 2013); consequently, it has been predicted that there will be a significant shortfall of teachers within a few years (Roksvaag & Texmon, 2012). Measures that will help reduce dropout during the course of teacher education are therefore welcome in that they can contribute towards accommodating the future demand for teachers. The present findings indicate that special attention needs to be directed towards male pre-service student teachers, focusing on their motivational orientations. The male students' weaker motivational orientations in several dimensions may have serious consequences for

their learning outcomes and study success, the quality of the professional work as teacher, and their stability as a teaching workforce.

This study may be regarded as explorative, as gender issues have received much less attention than other issues within the context of teacher education (Campbell & Sanders, 1997). Few scholars have investigated the importance of pre-service teacher gender and motivational orientations. Further research is needed to better understand the results reported in this study. Both quantitative and qualitative approaches are relevant here. The differences need to be further explored and explicitly addressed by teacher educators.

There are several limitations in this study. The type of analysis used has limitations from a conceptual perspective (parsimonious modelling) and in terms of its methodological (cross-sectional) approach. The limitations are acknowledged and they can serve as a point of departure for future research. One limitation of this study is the use of self-reported questionnaire data. The subjective component of such data is undeniable. Only a limited number of concepts were examined. A final limitation is the sample of pre-service teachers. The exact response rate of the email survey was difficult to determine because of the inactive use of email addresses. Due to this shortcoming, one cannot be sure that the sample is representative of the whole population of pre-service teachers in Norway. In sum, these shortcomings provide direction for future research. Future studies could include explanatory variables other than those that were included in the present study.

Conclusions

In Norway, as in many other countries, males are under-represented as students in teacher education, and male teachers are more likely to move out of the teaching profession early in their careers. Motivational orientations may be important driving forces behind learning outcomes and study success, the future quality of the professional work as teacher, and the stability of the early-career teaching workforce. Despite its shortcomings, this study may contribute to the understanding of gender variations in pre-service teachers' motivational orientations.

Pre-service teachers' gender and its associations with motivational orientations are under-researched issues. The purpose of this study was to investigate gender variations in pre-service teachers' motivational orientations. The study showed that male pre-service teachers are clearly less motivated and report higher levels of disillusion motivation. Female pre-service teachers were more influenced by teacher role models. Female pre-service teachers show higher intrinsic motivation and higher self-efficacy in classroom management. Further research is needed to better understand these significant findings.

The conclusion is that there may be significant interactions between gender and pre-service teachers' motivational orientations. These differences need to be further explored and explicitly addressed by teacher educators.

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