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Duration of On-Campus Academic Engagements of Student Teachers in Finland and Norway

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ABSTRACT

The duration of on-campus academic engagements is an uncertain and highly debated indicator of study input. Researchers adopt this indicator with the expectation that student teachers must invest an amount of time and effort in their courses that more or less equals a normal workweek. In the present empirical study, we examine factors influencing the duration of student teachers' on-campus academic engagements in Norway and Finland using survey data ($n = 567$). While the teaching profession is highly respected in Finland, and universities make selections for teacher education programs, the profession has a relatively low status in Norway. To meet the objectives of this study, we conducted an OLS regression analysis and found that students' self-discipline and perceived study requirements are the most important predictors of the duration of their on-campus academic engagements. In addition, the motivation to achieve a goal is also significant, while no significant effect was found for intrinsic motivation. Finally, the study shows no significant differences between the coefficients for the Norwegian and Finnish variable.

KEYWORDS

academic engagements;
student teachers;
self-discipline;
high expectations; teacher
education programs

Introduction

The extent of knowledge student teachers gain from their schooling depends, among other things, on the time and effort they invest in learning (Seidel & Shavelson, 2007). Academic engagement is a prerequisite for campus-based teaching and learning transfers for the practicum of teacher education. This study aims to investigate and compare factors that are statistically associated with student teachers' on-campus academic engagement in Norway and Finland. A comparative study can provide a better understanding of similarities and differences that are not obvious in educators' daily practice: '[The] structure and content of teacher education depend on a deeper rationale, which is a result of cultural boundaries. At the same time, teaching is a cultural practice that differs across countries. Like the water in the fish's tank, such cultural givens are too

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often invisible ... as we debate research about teacher education' (Blömeke and Paine, 2008, p. 2027). Although, as Nordic welfare states, Finland and Norway are neighbouring countries with considerable similarities, they also differ in schooling and teacher education.

According to the British Educational Research Association (BERA, 2014, p. 19), 'Overall, there is a lack of rigorous research on the relative effectiveness and outcomes of different models of initial teacher education'. Thus, a comparative analysis can offer new insights into embedded beliefs, perspectives and characteristics of the teacher education systems in Norway and Finland. As noted by Blömeke and Paine (2008, p. 2028), 'Looking beyond [a] country's experience [is] crucial for recognizing the taken for granted assumptions which drive it'.

Among European countries, Finnish pupils rank among the top in school assessments, for example, the Programme for International Student Assessment (OECD, 2014a), while Norwegian students' performance has been mediocre. Some relate these outcomes to the high and low status assigned, respectively, to the teaching profession in Finland and Norway. Finland has a high intake for teacher education. Given Finland's success in delivering good teachers and high-performing students, it is important to compare the time students invest in learning in Finland relative to that in Norway.

Teacher education in Finland and Norway

Teacher education in most national systems is a complex program offering a degree in an academic subject (e.g. mathematics, chemistry and physics) and pedagogical training that gives students practical insight into the teaching profession (Darling-Hammond and Lieberman, 2012). To qualify for the program in Finland, applicants must have a master's degree (300 European Credit Transfer and Accumulation System [ECTS]) from a university. The highly popular class teachers' program for grades 1–6 is required to major in education. The program consists of pedagogical education, including 20 ECTS for teaching practice, and 60 ECTS focusing on the teaching of all school subjects (pedagogical content knowledge); few students who want to be subject teachers choose to take all 60 ECTS in a single school subject.

Typically, Finnish subject teachers (grades 7–9 in lower secondary and grades 1–3 in upper secondary) pursue a master's degree in the subject they wish to teach. For example, a physics teacher studies for about five years, three of which are dedicated to physics (the first 1.5 years, at least, is spent among physics students) and one year each in studying a minor subject (e.g. mathematics) and studying teacher education (60 ECTS). Thus, there are several university departments involved in teacher education. Applicants must pass an aptitude test based on most subjects, although the number of applicants tends to exceed that of seats available in class teacher education programmes. For example, a university may be able to accommodate only about 10 per cent of applicants. For science teacher-education programs, not all applicants are accepted because some fail the aptitude evaluation, despite the number of available seats exceeding the number of applicants. Finally, students can sign up for subject teacher-education programs at any stage of their academic career: while being admitted to a university, during their course or after earning a master's degree. This means students applying to the department of teacher education at a given university come from diverse backgrounds. During their pedagogical education program,

subject student teachers must earn about 40 ECTS in general education and pedagogical content knowledge, including by writing a short thesis, and 20 ECTS in guided teaching practices at a teacher-training school or a city school in their field (Lavonen and Juuti, 2012).

In Norway, universities typically focus on grades 1–7 and grades 5–10 in their teaching programs, which employ a campus-based teacher-education model, meaning that theories are first discussed on campus and then applied in schools. Until 2017, Norwegian universities will offer a four-year integrated academic degree program, which will subsequently be restructured as a five-year master's program. At present, Norwegian universities mainly offer two teacher-education programs: a five-year integrated program focused on subject orientation (e.g. history, Norwegian or science) and a one-year teacher education course after bachelor's and master's degrees are acquired in the subject the student wishes to teach.

Despite the predominant low status assigned to the teaching profession in Norway, that status has recently appeared to be increasing somewhat (Ekspertgruppa om lærerrollen, 2016). At the same time, the academic level required for acceptance into a teacher-education program has significantly dropped¹ and so has the required IQ score for student teachers (Møen, Salvanes and Thorsen, 2012). An academic decline has also been measured in certain study components of teachers' professional education, for instance, in student teachers' math skills. In an international comparison, Norwegian student teachers who had chosen math as a study subject scored relatively low compared with those in Botswana (Ingvarson *et al.*, 2013). Nevertheless, we cannot overlook that fact that, today, Norwegian student teachers are more knowledgeable than in earlier times. The lack of reliable measurements suggests that we should be cautious about claiming a drop in teachers' level of knowledge in the subjects they teach. Thus, the question of whether student teachers are improving or deteriorating in Norway remains a controversial one. Furthermore, the growing need for teachers requires an increase in the number of properly educated teachers (Roksvaag and Texmon, 2012).

In Finland, the respect assigned to teachers emanates from the nation's traditional political emphasis on education as a mean of ensuring equality and as a moral responsibility (Niemi, 2012). Teachers are trusted and have significant pedagogical autonomy as teachers, educators and counsellors and in designing their classes, selecting learning materials and conducting student assessments. Universities have the academic freedom to organize teacher education programs and offer a university degree, rendering a diploma by an external authority unnecessary. In addition, there is national-level coordination between teacher education units and the Ministry of Education and Culture.

Given these structural and perceptual differences between teacher education programmes in Norway and Finland, this study explores whether the duration of academic engagement explains some of them. The purpose of this study is to examine factors influencing the duration of student teachers' on-campus academic engagements in both countries.

Theoretical Framework and Research Hypotheses

In both Norway and Finland, during their training courses, student teachers are expected to engage in on-campus activities for about the same amount of time as a full-time employees' normal workweek (e.g. University of Oslo, 2016; University of

Helsinki, 2016). Although few studies on teacher-education programs explain variations in the duration of student teacher's academic engagements, some research exists on their engagements in different types of teacher education courses (e.g. Martinussen and Smestad, 2011).

In this study, the duration of academic engagements denotes the sum of student activities devoted to their campus-based teacher-education programs, including lectures, student-led colloquiums, teacher-led seminars and individual studies, all of which are designed and promoted for students to achieve their learning goals. The literature contains various explanations regarding why students engage in academic activities. An important contributing factor is student teachers' motivations towards their studies (Rones and Smith, 2009). The social-cognitive theory perspective has a strong position in the field of educational psychology, and the concepts of motivation and self-regulated learning are in vogue. These theories often view education as a function of learning strategies, motivation, self-discipline and metacognition, bridging several strands of psychological research (e.g. Pintrich, 2000). Other scholars (e.g. Heckhausen, 1977; Corno, 2001; Kuhl, 1985) highlight motivation and self-discipline, as do we. First, we address motivation.

In general, motivation entails setting goals for one's own actions. Research divides the topic into two categories: intrinsic and extrinsic motivation. 'Extrinsic motivation' refers to behaviour that is driven by external rewards, while 'intrinsic motivation' is the inner drive to perform a task (Deci and Ryan, 1975), for instance, a student teacher's desire for pupils to learn or a feeling that the profession is exciting. This line of thinking forms the basis for our first hypothesis:

Hypothesis 1: *Intrinsic motivation predicts the duration of student teachers' academic engagements.*

For our research purposes, extrinsic motivation is of particular interest. Motivation to achieve a external goal - extrinsic motivation - is further divided into numerous subcategories (Deci and Ryan, 1985). For instance, the motivation to achieve a goal entails a comparison of one's own performance with that of others (Pintrich 2000). In teacher education, a student teacher's performance during a teaching practice is judged on the basis of a grade (pass or fail). In Norway, student teachers are assessed through several examinations using a six-stage graded scale, in which 'A' is the highest grade and 'F' is the lowest. Statistics indicate that a majority of awarded grades fall in the mid-range. In Finland, universities adopt a six-stage grading scale in which '0' equals a failure and '5' is the best. However, unlike in Norway, the grading system varies by university and student grades are not made public, making it difficult to conduct a comparative study.

External motivations to achieve a goal, however, can also arise during a course, not only at the end of one (Ashton, 1984). For instance, seminar leaders may implicitly evaluate a student's performance at the same time that fellow students draw conclusions about a student's skills on the basis of their own interpretations in formal and informal contexts. In such situations, the motivation to achieve a goal can be significant even if no explicit grade is awarded at that stage, and numerous studies have shown achievement goal motivation to have a significant impact on behaviour (e.g. Senko, Hulleman and Harackiewicz, 2011). Therefore, our second hypothesis is as follows:

Hypothesis 2: *The motivation to achieve a goal predicts the duration of student teachers' academic engagements.*

Self-discipline is the will to consciously undertake, persist in and fulfil a particular learning goal, whether formally or institutionally defined or self-chosen. Self-discipline is the mental faculty through which we impose an 'overriding value of ours on the array of pressures and temptations that seems extrinsic' (Ainslie, 2001, p. 3). Muraven and Baumeister (2000) propose that self-discipline can act as a muscle. Other scholars understand human behaviour to be governed by competition between the prefrontal cortex and the limbic system (McClure *et al.*, 2004). Importantly, students may instigate strategies to apply a conscious effort, supported by determination or extrinsic requirements, to persist in their pursuit of learning goals and resist temptations and stifle impulses to abandon them. This effort is called self-discipline or will power (Baumeister and Tierney, 2011). Self-discipline is generally a permanent personality feature; however, no individual is completely locked into one personality. Except in extraordinary situations, everyone has the option and opportunity to change their behavioural patterns. Thus, self-discipline can be regarded as a force within an individual that is significant for his or her ability to complete a course. Accordingly, our third hypothesis is as follows:

Hypothesis 3: *Actual self-discipline predicts the duration of on-campus academic engagements in teacher education studies.*

So far, the factors accounted for (motivation and self-discipline) can be considered qualities of individual students. However, the duration of academic engagements can also be understood as a response to demands and tasks that a course imposes on student teachers (Darling-Hammond and Lieberman, 2012). For instance, some sections of the teaching program comprise activities that are graded and assessed by the academic staff of a college or university. Lecturers can specify their demands through comments on student performance and compulsory submissions. Therefore, to identify the aspects of a teacher education program that generate effort in the form of academic engagements, we investigate how such demands and compulsory activities by universities and colleges are perceived during self-determined activities (e.g. individual studies). Thus, our fourth hypothesis is as follows:

Hypothesis 4: *Perceived study requirements predict the duration of academic engagements.*

As outlined in the introduction, this study aims to investigate and compare factors statistically associated with the duration of student teachers' on-campus academic engagement in Norway and Finland. Drawing on the similarities and differences between Finland and Norway in schooling and teacher education, our fifth hypothesis is as follows:

Hypothesis 5: *There are significant differences in the factors statistically associated with the duration of student teachers' on-campus academic engagements in Norway and Finland.*

Empirical Survey Methodology

Samples and Procedures

The reported analysis is part of a study that examines Norwegian and Finnish student teachers' preferences (e.g. motivation, self-discipline and perceived support from supervisors).

A questionnaire was distributed to Norwegian student teachers from selected institutions (university colleges and universities), including student teachers from the following programs:

- (1) One-year undergraduate teacher education program for candidates with a vocational or general academic educational background
- (2) Integrated five-year senior teacher education university program
- (3) Primary teacher education program (grades 1–7)
- (4) Primary/secondary teacher education program (grades 5–10)
- (5) General teacher education program (grades 1–10; old model)

The survey in Norway ($n = 432$) was conducted during the spring and autumn of 2013. Data were collected using two methods. First, a selected group of students was administered a paper-based questionnaire during an obligatory teaching seminar. The students were informed that participation was voluntary and they could withdraw from the survey at any point. None of the students who were present declined to take part in the survey. Second, students from four Norwegian university colleges offering primary, secondary or general teacher education programs participated in an electronic questionnaire conducted by Advicia. The researchers emailed the electronic questionnaire to addresses provided by the institutions. It is not possible to estimate the exact response rate within this sample because at two of the selected institutions numerous students did not use the institutionally allocated e-mail addresses. Nevertheless, a comparison of gender and age shows that this sample is well aligned with the characteristics of the general population of student teachers at the university colleges.

The survey in Finland ($n = 135$) was conducted in two phases during the winter and autumn of 2015. Biology, chemistry, physics and mathematics student teachers in a pedagogical education course were given a paper-based questionnaire during a compulsory seminar session on teaching practices. By the time of the data collection, students had completed about two-third of their pedagogical education. Students were told that the questionnaire was part of an international comparative study and that answering it was voluntary. All students who were present at the seminar session participated in the research and varied from second-year undergraduates to those possessing master's degrees. Participating students who had attained a master's degree included some pursuing PhDs. The second phase of the survey in Finland was conducted as follows. Participants were given a paper-based questionnaire during their first lecture (at which student attendance is compulsory) of the class teacher education programme for fourth-year students. Further, students were assured that they would receive the preliminary results of the

subject student teachers' survey. All students present at the lecture except one answered the questionnaire.

Measurement Instruments

The questionnaire was based on measurement instruments previously reported in the literature. We developed a new instrument to measure perceived study requirements (Haladyna and Rodriguez, 2013). Table 1 presents the reliability values, items and descriptive statistics from the instruments and their study sources. Student teachers responded to item scores on a seven-point scale, in which 'four' was a neutral value. The concepts were measured using 2–3 single items. The items and Cronbach's alpha (α_c) for each concept are presented in Table 1, which shows that the reliabilities are satisfactory.

The item used to measure the duration of student teacher's academic engagements included '*During a typical week, how many hours do you spend on the following study activities?*' In answering this question, students were asked to estimate the number of hours they spent on certain activities each week. Table 2 presents the descriptive statistics.

The descriptive statistics reveal only small differences in the total time spent on study between Finland and Norway, but there are interesting differences in seminar practice. In Finland there is much higher participation in teacher-led seminars. One possible interpretation is that students are offered more seminar opportunities in Finland compared with Norway. In Norway there seems to be more collaborative practice among students through colloquiums. These colloquiums are not mandatory.

Analysis

We conducted an OLS regression to analyse the relationships between the variables. The analyses are based on a sample of 567 Norwegian and Finnish students. The independent variables – self-discipline, intrinsic motivation, achievement motivation and perceived study requirements – are indices based on 2–3 items (Table 3). All indicators are measured on a scale from 1 to 7 (low–high). Therefore, the constructs self-discipline (sd), intrinsic motivation (im), achievement motivation (pm) and perceived study requirements (he) are assumed to be on approximately interval level. The independent variables (sd, im, pm and he) are grand mean centred to reduce the influence of multicollinearity in the interaction models. We also include the dichotomous variable 'country' as a control variable in the models in which Norway and Finland are coded as 0 and 1.

Results and Discussion

Table 3 presents the unstandardized coefficients from the OLS regression with time-on-task as a dependent variable (T1 = total duration of academic engagements, T2 = time spent on lectures and teacher-led seminars and T3 = time spent on individual studies and student-led colloquiums). All regression models are only predicting a


Table 1. Descriptive statistics for items, reliability (Cronbach's alpha) and source of instruments.

Construct	Item	NOR		FIN		alpha	Source
		Mean	SD	Mean	SD		
Motivation to achieve a goal (pm)	It is important that other students look up to me.	3.15	1.56	2.16	1.30	.80	Ames and Archer, (1988)
	It is important for me to be considered the best in my study group.	2.40	1.44	1.86	1.13		
Intrinsic motivation (im)	I want to be a teacher because I want to make learning interesting for others.	6.01	1.07	4.68	1.33	.68	Vallerand <i>et al.</i> (1992)
	I want to be a teacher because working with children and young people is meaningful.	5.99	1.07	5.55	0.99		
Self-discipline (sd)	I generally complete study assignments before their deadlines.	3.63	1.89	3.22	1.63	.76	Tangney, Baumeister and Boone (2008)
	I allocate time for studying, but I do not manage to get it done. (reversed)	4.66	1.75	5.70	1.49		
Perceived study requirements (he)	I often put things off; I do not do them until the last minute. (reversed)	4.33	1.90	3.71	1.81		
	Compared with my high school education, the study requirements are much greater in my teacher education studies.	5.44	1.57	4.92	1.54	.82	
	Compared with my high school education, I have to dedicate more time to keep up with my teacher education studies.	4.97	1.78	4.96	1.66		
N		432		135		567	

Table 2. Descriptive statistics of duration of academic engagements in Finland and Norway.

Activity type	NOR		FIN		Difference	
	Mean	SD	Mean	SD	Mean	SE
Lectures	8.73	5.04	8.20	4.17	0.53	.43
Teacher-led seminars	3.57	2.82	6.88	3.53	-3.31*	.33
Student-led colloquiums	2.57	2.71	1.20	1.59	1.37*	.19
Individual studies	11.20	7.37	10.33	7.35	0.87	.73
Total time	26.08	9.33	26.61	11.25	-0.53	1.07
N	432		135			

* Significant at 5 %

Table 3. Unstandardized coefficients from OLS regression with time-on-task as a dependent variable (n = 567). Coefficients in *italic bold* were significant at the .05 level. T1 = total duration of academic engagement, T2 = time spent on lectures and teacher-led seminars and T3 = time spent on individual studies and student-led colloquiums.

	T1				T2				T3			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	b	SE(b)	b	SE(b)	b	SE(b)	b	SE(b)	b	SE(b)	b	SE(b)
Constant	25.73	0.44	25.74	0.44	12.17	0.25	12.13	0.25	13.56	0.34	13.61	0.34
Self-discipline (sd)	1.82	0.25	1.57	0.27	0.41	0.14	0.23	0.15	1.41	0.19	1.33	0.21
Intrinsic motiv. (im)	0.42	0.40	0.17	0.46	0.24	0.23	0.33	0.26	0.17	0.31	-0.16	0.36
Achiev. mot. (pm)	0.82	0.28	1.04	0.31	0.25	0.16	0.38	0.18	0.56	0.22	0.66	0.25
Perceived study requirements (he)	1.16	0.24	1.65	0.28	0.48	0.14	0.52	0.16	1.13	0.19	1.12	0.22
country	1.96	0.97	1.88	1.10	3.31	0.55	2.84	0.63	-1.35	0.78	-0.95	0.87
sd*country ¹⁾			1.30	0.67			1.00 ²⁾	0.38			0.30	0.53
im*country ¹⁾			0.90	0.95			-0.47	0.54			1.37	0.75
pm*country ¹⁾			-1.02	0.76			-0.52	0.43			-0.50	0.60
he*country ¹⁾			0.19	0.60			-0.17	0.34			-0.02	0.47
R-adjusted	0.169		0.174		0.085		0.093		0.161		0.163	

¹⁾ The interaction coefficients indicate the difference between the Norwegian and Finnish variable coefficients, with Norway and Finland coded as 0 and 1.

²⁾ We found only one significant interaction coefficient, indicating that the coefficient for sd differs between Norway and Finland.

small proportion of the variance in academic engagement. The reason is that the regression models are parsimonious models. The analysis indicates that students' self-discipline (sd) and perceived study requirements (he) are the most important predictors of the duration of on-campus academic engagements. We also found significant effects of the motivation to achieve a goal (pm), but not in the case of time spent on lectures and teacher-led seminars. No significant effects of intrinsic motivation (im) were found. In addition, none of the interaction coefficients were significant, indicating no statistical differences between the Norwegian and Finnish variable coefficients. It is important to note that all regression models are only predicting a small proportion of the variance in academic engagement. However, this is often happening. As an example, the predicted variance in academic engagement in our study is approximately at the same level as predicted variance in reading ability from motivation in the well-known PISA survey (OECD, 2013). However, we recognize that we examined only a limited number of theoretical concepts in our study.

The aim of this study was to investigate the factors statistically associated with student teachers' self-reported duration of academic engagement in Norway and Finland. We formulated five hypotheses based on our prediction of student teachers' duration of on-campus academic engagement. In particular, we focused on whether intrinsic motivation (hypothesis 1), motivation to achieve a goal (hypothesis 2), self-discipline (hypothesis 3) and perceived study requirements (hypothesis 4) predicted student teachers' duration of academic engagement. In addition, we examined possible statistically significant differences between the coefficients for Norway and Finland (hypothesis 5).

The analysis showed no statistically significant association between intrinsic motivation and duration of academic engagement, thus hypothesis 1 was not supported. We found statistically significant associations between the motivation to achieve a goal and total time spent on studying, but not between time spent on lectures and teacher-led seminars, thus partially supporting hypothesis 2. In addition, statistically significant associations existed between self-discipline, as well as perceived study requirements, and the duration of academic engagement, which supports hypotheses 3 and 4. There were no statistically significant differences between the Finnish and Norwegian coefficients; that is, hypothesis 5 was not supported.

In sum, two issues require further interpretation and discussion: first, the lack of an association between intrinsic motivation and the duration of academic engagement and, second, the non-significant association between the motivation to achieve a goal and time spent on lectures and teacher-led seminars. One interpretation could be the expectations on students to participate in lectures and seminars while conducting independent studies, such as acquainting themselves with educational literature, compiling plans, preparing presentations and performing small-scale research. Tensions exist between academic self-studies and effective cognitive activation via mandatory study demands. In other words, the learning process for student teachers appears to be tightly controlled by strict deadlines and external incentives and consequences, which limit the space for activities of interest, feelings of personal importance and even the desire to receive recognition or gain prestige (Archer, 1994). If a student valued recognition and prestige (motivation to achieve a goal), he or she would invest more effort in preparing presentations and contributing to peer groups; however, the mean values for motivation to achieve a goal were low.

However, the results might be different if students had more time to dedicate to issues of preference and what they find interesting and challenging. Table 2 shows that the total time spent in academic engagements in Finland and Norway in a typical week was 26.61 hours (in Finland) and 26.08 hours (in Norway). It is widely acknowledged that Finnish teacher education is highly valued internationally and valued much higher than the system in Norway. The differences between the countries are apparent in the number of applicants for teacher education programs and the average high school grades of Finnish student teachers compared with those in Norway. Likewise, being a teacher seems to have a higher social value in Finland than in Norway (OECD, 2014b). These differences in teaching and teacher education between the two countries make the almost equal requirements on students' time a rather paradoxical finding. Assuming that Finnish teacher education is of better quality and that teaching is more socially valued in Finland, neither the assumed quality difference nor the difference in social valuation of the profession apparently cause

Finish students to spend more time studying than their Norwegian counterparts. Furthermore, according to ECTS, studies in both countries are apportioned such that one academic year equals 1,600 hours (200 days, 40 hours per week). Thus, student teachers spend much less time than is allocated for full-time studies. The low amount of time of study required for teacher education compared with medical and architecture studies (Damen *et al.*, 2016) is a further puzzle.

The extent to which students in both countries have the freedom to make active choices regarding their university studies is not well known (Reeve *et al.*, 2004). There are subtle differences between study programmes in Norway and Finland which may matter. For example, at a university in Finland, students select their minor subjects but have little freedom to choose courses within these subjects. In Norway, students select their subject programme and have some freedom within these subjects. Another question is how actual teaching during lectures and teacher-led seminars, as well as activities for individual studies, nurture students' perceptions of the relevance of their own teaching practice during practicum.

The purpose of this study was to examine factors influencing the duration of student teachers' on-campus academic engagements in Norway and Finland. In discussing the results, it is important to revisit the survey questions. The intrinsic motivation items focused on student motivation to work as teachers with children, which at least theoretically seems important when investigating time-on-task in teacher education. However, it is possible that students are intrinsically motivated to be teachers but are not per se interested in their teacher education studies. On the other hand, students could be interested in issues of learning (or other educational phenomena) but unwilling to work as a teacher. Either way, it is possible that students opt for a teacher education course simply to ensure they have job prospects. Thus, when evaluating teacher education, it is important to differentiate among students' intentions (Krzywacki and Juuti, 2006). Because students may have low or high intention teaching intentions and low or high academic intentions, how to nurture both remains a challenge for teacher education programmes.

On the other hand, the survey's performance motivation questions focused on social admiration for study performance. The significance of social admiration supports the importance of this aspect of the social environment when studying, particularly in education, a profession in which students meet regularly and get to know each other during their studies. However, the effect of performance motivation is not large, and we acknowledge that the questions that focused on the importance of professional goals in becoming a teacher might be a better predictor of time spent on study activities.

Limitations of this Study

An analysis of this nature has limitations from a conceptual perspective (e.g. parsimonious modelling) and in terms of methodology (e.g. a cross-sectional approach). We acknowledge these limitations and argue that they can serve as points of departure for future research.

One limitation of this study was the use of self-reported questionnaire data. An estimation of students' academic engagements based on students' self-reports is not an actual measurement of their time spent on campus. The subjective component of such

data is undeniable. The accuracy of students' self-reported time use can be debated. Social desirability bias in student self-reporting surveys has been discussed in the research literature (e.g. Porter, 2011; Miller, 2012). Nevertheless, the mean reported time use among the Norwegian students in our survey was low: 26.08 hours per week. The same was true in Finland: 26.61 hours. These mean values do not indicate systematic over-reporting in our sample. The mean values also correspond well with other recently available surveys of student teachers' time use. For instance, the Norwegian value is close to the mean for student teachers in the national study barometer survey implemented by the Norwegian Agency for Quality Assurance in Education, NOKUT (Lid, 2014).

Another limitation is that we examined only a limited number of concepts and applied the same questionnaire to several different teacher-education programs. We suggest that the time students spend on studies might be highly influenced by a 'student culture' established over decades. Taking an institutional perspective (Scott, 2000), patterns of behaviour such as study habits are highly influenced by institutional opportunities and the culture of experienced students and then integrated into the time framework by the teacher education institutions. Such cultures are first integrated into requirements for reading and exams and could be transferred, as well as maintained, through modelling from older student and sanctions for deviant (unusual or unacceptable) practice.

It is also possible that participating students in different programs understood the questions differently. A final limitation is the sample size of student teachers. The exact response rate of the e-mail survey (Norwegian sample) was difficult to determine because of the inactive e-mail addresses. Because of this shortcoming, we were unsure whether our sample was representative of the entire population of student teachers in Norway. In Finland, the sample comprised two student cohorts at one university: science and mathematics student teachers and class student teachers. Therefore, one has to be careful about generalizing the Finnish results.

Nevertheless, we found no significant differences between the Norwegian and Finnish samples regarding the analysed variable coefficients. Therefore, the research may reveal some general tendencies impacting the duration of student teachers' academic engagements, which are stable across different teacher educational contexts. Moreover, the consistent and limited role of intrinsic motivation in affecting the duration of academic engagements is interesting and should be the subject of further research.

Future research could add also more explanatory factors to the theoretical framework to increase understanding of the variance among dependent variables. There is, for instance, previous literature on a range of non-cognitive attributes (Brunello and Schlotter, 2011) that are important in educational settings and could be utilised in future research. Finally, more research is needed to improve the content validity.

Conclusion

Despite its shortcomings, this study may contribute to the understanding of motivations for student teachers' academic engagement. If the associations found represent causal relationships, the conclusion must be that perceived study requirements, achievement

goal motivation and self-discipline are the important antecedents of academic engagement. The self-discipline of student teachers is mostly a personality factor that is associated with academic engagement, while the intrinsic motivation of student teachers is weakly associated with academic engagement. Self-discipline appears to be of considerable significance for self-managed study by student teachers. Unanswered questions are whether teaching self-discipline strategies or other institutional arrangements would sustain academic engagement, and how higher perceived study requirements influence academic engagement. More research is also needed on how institutional arrangements influence academic engagement by stimulating achievement goal motivation. We recognize that we examined only a limited number of concepts in our study. An avenue for further research is to implement a more elaborated theoretical framework with more nuanced concepts. This might lead to a higher proportion of the explained variance.

Notes

1. Recently, while the grades required for acceptance into certain teacher-education programs have increased, they have decreased for others. This suggests uncertain trends in the short run, yet a long-term tendency toward lower intake quality.

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