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Published in:
Teaching Education

DOI:
[10.1080/10476210.2015.1034682](https://doi.org/10.1080/10476210.2015.1034682)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2015

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Fokkens-Bruinsma, M., & Canrinus, E. T. (2015). Motivation and degree completion in a university-based teacher education programme. *Teaching Education*, 26(4), 439-452.
<https://doi.org/10.1080/10476210.2015.1034682>

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Motivation and degree completion in a university-based teacher education programme

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(Received 18 March 2014; accepted 18 March 2015)

This study investigated which factors determine degree completion in a Dutch university-based teacher education programme. We assumed that both student characteristics and characteristics of the learning environment affected degree completion. We included the following factors in our study: motivation for becoming a teacher, teaching self-efficacy, professional commitment, perceptions of time management and perceptions of quality of instruction in the teacher education programme. Data were collected from 135 preservice teachers using a digital questionnaire. The student administration of the teacher education department provided data on degree completion. Analyses showed that teaching ability was the most important motive for becoming a teacher; it was also found to be a negative predictor of degree completion. We found that social utility values, professional commitment, perceptions of quality of instruction and time management contributed to the prediction of degree completion. The findings and implications for teacher education and policy are discussed.

Keywords: teacher motivation; preservice teachers; degree completion

Introduction

The Netherlands is facing a shortage of secondary school teachers. This problem was already acknowledged by the Dutch government in 2007 (Ministry of Education, Culture & Science, 2007). They specified a set of actions that should counter this problem (Ministry of Education, Culture & Science, 2007). Next to the effects of the economic crisis, which made more students choose the teaching profession, made teaching an attractive alternative career and made older teachers postpone their retirement, these measures have resulted in lower teacher shortages than initially expected (Ministry of Education, Culture & Science, 2011). Despite this, the teacher shortage in secondary education, and especially the need for grade-one-qualified secondary school teachers – teachers who are qualified to teach in upper secondary education¹ – still remains a concern for Dutch policy.

Teacher shortage is generally caused by several aspects: teacher retirement, teacher attrition, difficulties with recruiting preservice teachers for teacher education programmes and their achievement in these programmes (see e.g. Bruinsma & Jansen,

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2010; Rots, Aelterman, Vlerick, & Vermeulen, 2007). It is this latter aspect, achievement, in terms of degree completion, which we will focus upon in this study.

In our study, we start from an interaction approach, an approach that is common in all fields of educational study. This approach assumes that the interaction between both student characteristics and the student's interaction with the social and the academic environments influence the decision to persist or to withdraw from higher education (Pascarella & Terenzini, 1991). Many studies in higher education have shown that this interaction approach provides for a good theoretical framework for examining, completion or dropout in higher education (see Bruinsma & Jansen, 2007; McInnis, Hartley, Polesel, & Teese, 2000 for an overview).

These studies identified many variables that might be influential for learning and outcomes in higher education. To examine which variables might be the most influential variables for learning and outcomes, Bruinsma and Jansen (2007) examined a model based on the Walberg educational productivity model (Reynolds & Walberg, 1991). The Bruinsma and Jansen model was built on two assumptions, namely (1) that most variables that could be influenced by schools and teachers were included and (2) that it was a parsimonious model, including a small but relevant set of variables to explain and predict persistence and success in higher education. They included three sets of variables that had been found to be successful in explaining achievement and completion in higher education:

- student aptitude–attributes among which, prior achievement, motivation and developmental level (measured by age)
- instructional aspects, namely the quality and quantity of instruction
- the social-psychological environment, which concerned the home environment, the educational environment, the peer environment and exposure to mass media

The interaction approach and especially the combination of student aptitude–attributes characteristics, instructional aspects and the social-psychological environment is also relevant for teacher education, where preservice teachers simultaneously function in a school context and in a teacher education programme. Already in 1983, Chapman noted the importance of the complex interaction between the teacher and his/her environment. In his model, factors such as personal characteristics, educational preparation, initial professional commitment to teaching, integration in and commitment to the education programme and school, and the quality of the first teaching experiences all affected retention in the teacher profession. Since then, several researchers have used this interaction approach to explain retention in the profession (see e.g. Rots et al., 2007) and retention in the programme (see e.g. Jungert, Alm, & Thornberg, 2014).

In line with these authors, we developed a study including both preservice teachers' characteristics, and some characteristics of the learning environment to investigate the influence on preservice teachers' degree completion. We added the following student characteristics to our conceptual model: the motivation for becoming a teacher, teaching self-efficacy, professional commitment and perceptions of own time management. The perceptions of quality of the teacher education programme were included in the model to measure the learning environment. In the following section, we will discuss the relevance of each of these variables further.

The present study: goals and conceptual models

Motivation for becoming a teacher

According to Sinclair, Dowson, and McNerney (2006) and the Ministry of Education, Culture & Science (2007), understanding teachers' motivation for teaching is essential to understand how prospective teachers can be attracted to and retained in the profession. Previous studies have shown that the motivation for becoming a teacher determines how committed preservice teachers are to their *profession* (Bruinsma & Jansen, 2010; Canrinus & Fokkens-Bruinsma, 2014; Fokkens-Bruinsma & Canrinus, 2012a, 2012b). Here, we investigated whether the motivation for becoming a teacher also determines degree completion in the *teacher education programme*.

Teaching self-efficacy and affective professional commitment

Next to the motivation for becoming a teacher, we included teaching self-efficacy and professional commitment in our study. Several studies have shown the importance of both teaching self-efficacy and professional commitment for several teacher outcomes. Research indicated that teachers with a higher self-efficacy show more enthusiasm, feel more involved in teaching and healthier and drop out of teaching less often (Darling-Hammond, Chung, & Frelow, 2002; Rots et al., 2007; Tschannen-Moran & Hoy, 2001). Teacher professional commitment has been related to teachers' actual entrance into the profession (Rots et al., 2007) as well as to their work performance and their students' achievement in school (see Crosswell & Elliott, 2004). We assume that teaching self-efficacy and professional commitment also determines degree completion.

Perceptions of time management

Preservice teachers' perceptions of their own time management was included in our study, since many studies have indicated the importance of time management for academic achievement (see e.g. van der Meer, Jansen, & Torenbeek, 2010). For preservice teachers, good time management skills are important, since they have to balance the demands from university (attending classes, finishing assignments and assessments on time) and from schools (preparing their classes, grading papers on time) (Cemaloglu & Filiz, 2010). Cemaloglu and Filiz (2010) also suggested that, as teachers have to plan their lessons and start and finish their lessons on time, teachers' time management skills are important for their professional success.

Perceptions of the quality of instruction

We finally included the perceptions of quality of instruction in the teacher education programme as a context factor. Research in higher education indicated that the quality of instruction is beneficial to learning and learning outcomes (Wilson, Lizzio, & Ramsden, 1997). Chapman (1983) also emphasised the adequacy of teacher preparation programmes as an important variable for retention. And, Sinclair (2008), for example, indicated the importance of the quality of coursework (such as workload and assignments) for preservice teachers' personal benefits, such as enjoyment, and enthusiasm and for their enhanced academic achievement. Continuing this line of

thought, we assumed that the perceptions of quality of the programme would be related to degree completion as well.

The goals of this study were twofold; we first wanted to examine preservice teachers' motivation for becoming a teacher, their professional commitment, self-efficacy and perceptions of quality of the programme. Secondly, we were interested in which of the aforementioned factors determined degree completion in the teacher education programme. We specified two models: a basic model where all variables were directly related to the outcome variable and an interaction model where the interaction between student characteristics and the learning environment was included.

Method

Context

Our participants were enrolled in a Dutch university-based teacher education programme. A degree in this context can be obtained in multiple ways. First, there are preservice teachers who have finished their bachelor's degree programme and are enrolled in an educational master programme which consists of subject domain courses in the first year and teacher education in the second year. In addition to these educational master students, preservice teachers who obtained a master's degree in a specific subject (e.g. English Language and Culture or Science) were included. These preservice teachers follow a one-year course in teacher education. One academic year equals a study load of 60 ECTS (European Credit Transfer System), and one ECTS equals 28 h of study. During their teacher education, all preservice teachers have an internship at a school for 25 ECTS credits during one school year (that is a workload of 700 h). The other 35 ECTS credits consist of courses on educational sciences, teaching methods, and the subject these preservice teachers teach.

Participants

In 2009, 135 university-based preservice teachers (of which 61% were female, and the mean age at data collection was 26 years) completed a questionnaire on their motivation to become a teacher, self-efficacy and affective commitment to the profession. The questionnaire also contained questions on the perceptions of the quality of instruction and on preservice teachers' perceptions of their own time management skills. Data on these preservice teachers' degree completion were obtained via the student administration of the teacher education department. Based on their starting and end date, we determined whether or not these teachers obtained their teaching degree within the nominal study duration of 12 months. Of our preservice teachers, 59% ($N = 80$) had obtained their degree within the nominal study duration. The other 41% ($N = 55$) of these teachers had either dropped out from teacher education or were still studying after 12 months. There were no significant differences between these two groups based on age or gender.

Instruments

Characteristics of preservice teachers

In 2012, Fokkens-Bruinsma and Canrinus validated the FIT-Choice Scale for the Dutch context. They found a factor structure that differed slightly from the original

Table 1. Descriptive statistics of the variables included in this study.

Variables	<i>M</i>	<i>SD</i>	Number of items	α
<i>Motives</i>				
Social utility values	4.75	.97	5	.78
Teaching ability	5.17	.77	3	.77
Work with children	4.92	1.00	4	.79
<i>Professional commitment</i>				
Affective professional commitment	5.15	.87	6	.80
<i>Teaching self-efficacy</i>				
Classroom self-efficacy	4.04	.56	19	.90
<i>Time management</i>				
Time management	4.04	.75	4	.72
<i>Quality of instruction</i>				
Good teaching	4.06	.68	6	.89
Generic skills scale	3.18	.82	6	.83
General quality	3.56	.93	2	.67

Watt and Richardson (2007) study, though the higher order factor structure was comparable. Here, we used the Dutch factor structure to compute our scales. We used three scales, namely: (1) social utility values, which is comparable to altruistic motives for becoming a teacher (e.g. wanting to make a social contribution), (2) perceived teaching ability and (3) work with children and adolescents. We chose these three scales, since our previous studies have shown that these three scales are related to various teacher outcomes (see Fokkens-Bruinsma & Canrinus, 2012a, 2014 for an overview of these variables). Table 1 shows the descriptives and a sample item for each of these scales. The scales' reliability ranged from $\alpha = .77$ for teaching ability to $\alpha = .78$ for social utility. The preservice teachers' motives were measured on a seven-point Likert scale.

Based on previous findings (see Fokkens-Bruinsma & Canrinus, 2012a), we decided to measure professional commitment using the affective professional commitment scale. We used an adapted version of the questionnaire of Meyer, Allen, and Smith (1993, see Canrinus, 2011 for more details). The affective professional commitment scale consisted of six items using a 7-point Likert scale, ranging from 1 'not important' to 7 'extremely important' ($\alpha = .80$).

We used the classroom self-efficacy scale, consisting of 19 items, from the questionnaire of Friedman and Kass (2002) to measure teaching self-efficacy. This questionnaire measured self-efficacy on a 6-point Likert scale ($\alpha = .90$).

Perceptions of time management skills were measured with a scale from the Readiness and Expectation Questionnaire (Jansen, André, & Suhre, 2013). This instrument measures students' expectations and readiness on various aspects. Using this instrument, preservice teachers could indicate whether or not they perceived themselves proficient in time management on a 5-point Likert scale ($\alpha = .72$).

Characteristics of the learning environment

Perceptions of quality of instruction in the teacher education programme were measured by three 5-point Likert scales from the Course Experience Questionnaire (CEQ, Ramsden, 1991). The CEQ was developed by Ramsden (1991) and has proven to be valid and reliable for many samples of students in British, Australian and

Dutch higher education (Byrne & Flood, 2003; Eley, 2001; Grebbinikov & Skaines, 2008; Lizzio, Wilson, & Simons, 2002). We included preservice teachers' perceptions of good teaching ($\alpha = .89$), the attention to the development of generic skills ($\alpha = .83$) and the general quality of the programme (.67). These three scales were chosen since they were the core scales in the Course Experience Questionnaire.

Results

We analysed our data using descriptive statistics and logistic regression analyses. First, the findings concerning the preservice teachers' scores on their motivation, self-efficacy, affective professional commitment, perceptions of own time management and perceptions of the quality of instruction at the teacher education programme will be presented. This is followed by the two logistic regression analyses, one for the basic model and one for the interaction model.

Descriptive statistics

The analyses showed that teaching ability, that is, the expectancy of one's own teaching abilities, was a highly rated motive. Furthermore, Table 1 shows that the preservice teachers scored well above the scale mean for affective professional commitment and slightly above the scale mean for classroom teaching self-efficacy. These preservice teachers were highly committed and scored high on aspects such as feeling proud of being in education and being enthusiastic of teaching. Preservice teachers also scored high on the scale for perceptions of time management. This indicated that they perceived themselves to be skilful in time management, such as being good in planning their education. Lastly, our analyses indicated that the preservice teachers were satisfied with the quality of teaching and the general quality of the teacher education programme. The preservice teachers were less satisfied with the attention to generic skills development in the programme. This concerned aspect such as working as a team member and learning how to deal with complex problems.

Logistic regression analysis

We conducted two logistic regression analyses to predict obtaining a teaching degree within the nominal duration of 12 months. Our dependent variable 'completion' is equal to 1 when preservice teachers obtain their degree within 12 months.

Significant predictors of obtaining a degree within 12 months

In the basic model, motivation, self-efficacy, affective professional commitment, time management and the perceived quality of instruction were used as predictor variables. A test of the full model against a constant model was statistically significant ($\chi^2 (9) = 38.78, p < .000$). This shows that the predictors reliably distinguished between preservice teachers who obtained their degree within 12 months and those who did not.

Nagelkerke's R^2 of .54 indicated a moderately strong relationship between our dependent and independent variables (see Table 2). The goodness-of-fit test (Hosmer–Lemeshow) yielded a $\chi^2 (8)$ of 3.24, $p = .92$ and was insignificant, which

Table 2. Parameter estimation logistic regression: basic and interaction models.

Variable	Basic model		Interaction model	
	<i>B</i>	SE	<i>B</i>	SE
Constant	1.48	.39	1.91	.60
<i>Motives</i>				
Social utility	1.33**	.49	2.67***	.84
Teaching ability	-1.26*	.49	-2.17*	.99
Work with children	.56	.36	1.31	.69
<i>Professional commitment</i>				
Affective professional commitment	1.16*	.46	1.58*	.72
<i>Teaching self-efficacy</i>				
Classroom teaching self-efficacy	.40	.46	.24	.73
<i>Time management</i>				
Time management	1.33***	.44	1.96*	.66
<i>Quality of instruction</i>				
Good teaching scale	-.36	.53	-.05	.75
Generic skills scale	-.48	.44	-.88	.72
General quality	-1.07	.59	-2.07*	.94
<i>Interactions</i>				
Social utility × Good teaching scale			-.16	.77
Teaching ability × Good teaching scale			2.89*	1.17
Work with children × Good teaching scale			-.31	.69
Social utility × Generic skills scale			-.03	.63
Teaching ability × Generic skills scale			1.43	.76
Work with children × Generic skills scale			-1.60	.84
Social utility × General quality			.03	.88
Teaching ability × General quality			-2.15*	.99
Work with children × General quality			.76	.70
% correct prediction	85%		90%	
Nagelkerke R^2	.54		.68	
Hosmer–Lemeshow	$\chi^2 = 3.24, df = 8,$ $p = .92$		$\chi^2 = 8.88, df = 8,$ $p = .35$	

* $p < .05$; ** $p < .01$; *** $p < .001$.

points to a good fit of the model to the data. Overall prediction success was 85%, with 64% for not obtaining a degree within the nominal duration and 95% for obtaining a degree within the nominal duration. The Wald criterion showed that the variable social utility ($\beta = 1.33, p = .007$), time management ($\beta = 1.33, p = .002$) and affective professional commitment ($\beta = 1.16, p = .011$) made significant positive contributions to the prediction. Teaching ability ($\beta = -1.26, p = .011$) on the other hand made a significant negative contribution to the prediction. This means that pre-service teachers with a higher self-perceived ability to teach did not obtain their degree within 12 months.

For the interaction model, we used the variables from the basic model and included the interactions between the perceived quality of instruction variables and the other variables. Here, we found that the full model was statistically significant ($\chi^2(18) = 53.56, p < .000$), which indicated that the predictors reliably distinguished between preservice teachers who obtained their degree within 12 months and those who did not.

Nagelkerke's R^2 of .68 indicated a moderately strong relationship between our dependent and independent variables (see Table 2). The goodness-of-fit test

(Hosmer–Lemeshow) yielded a χ^2 (8) of 8.88, $p = .35$, and was insignificant. This, similar to the basic model, pointed to a good fit of the model to the data. Overall prediction success was 90%, with 80% for not obtaining a degree within the nominal duration and 95% for obtaining a degree within the nominal duration. The Wald criterion showed that social utility ($\beta = 2.67$, $p = .001$), time management ($\beta = 1.96$, $p = .003$) and affective professional commitment ($\beta = 1.58$, $p = .03$) made positive contributions to the prediction. In contrast, teaching ability ($\beta = -2.17$, $p = .030$) and general quality ($\beta = -2.07$, $p = .03$) made negative contributions to the prediction.

Interaction effects

We also found two significant interaction effects. The first effect is positive and includes teaching ability $\times$ good teaching ($B = 2.89$, $p = .01$). This implies that the relationship between good teaching and obtaining a degree varies depending on the preservice teachers' self-perceived ability. The effect is small and not significant for those preservice teachers who perceive their ability as low, whereas the effect is significant with a standardised beta of $B = 2.89$ for the preservice teachers who perceive their teaching ability to be high.

The second interaction effect is a negative effect and concerns teaching ability $\times$ general quality ($B = -2.15$, $p = .03$). This implies that the effect general quality has on obtaining a degree varies depending on the preservice teachers' self-perceived ability. We find that for those preservice teachers who perceive their teaching abilities to be low, there is an effect of -2.07 from the quality of the programme on obtaining a degree. This means that the preservice teachers who obtain their degree within the nominal duration are less satisfied with the general quality of the programme. For the preservice teachers who find that they have high teaching abilities, this effect is even stronger ($B = -4.22$).

Odds ratios

Table 3 presents the odds ratios for the two models. In the basic model, the odds ratio was 3.78 for social utility values, which indicates that when social utility increases with one standard deviation preservice teachers are 3.78 times as likely to obtain their degree within 12 months when controlled for the other variables in the model. The odds ratio for teaching ability (.28) was below one. This finding can be interpreted as follows: when teaching ability increases with one standard deviation, preservice teachers are $1/.28 = 3.6$ times less likely to obtain their degree.

The findings for the interaction model are somewhat more complex. Our analyses showed that the interaction model, where interactions were specified between the perceived quality of instruction variables and the other variables, showed a better fit and a higher percentage of correct predictions, than the basic model did. As mentioned before, we found interaction effects for teaching ability $\times$ good teaching and for teaching ability and general quality of the programme.

When looking at the odd ratios for good teaching, we found the following. Whenever preservice teachers perceptions of good teaching increased with one standard deviation, the odds ratio increases with .95. This means that these preservice teachers were $1/.95 = 1.05$ times less likely to obtain their degree within the nominal duration. Preservice teachers, with high perceived teaching abilities

Table 3. Results logistic regression analysis on obtaining a degree expressed in the odds ratio.

Variable	Odds ratio: basic model	Odds ratio: interaction model
<i>Motives</i>		
Social utility	3.78	14.4
Teaching ability	.28	.12
<i>Professional commitment</i>		
Affective professional commitment	3.20	4.85
<i>Time management</i>		
Time management	3.79	7.07
<i>Instruction</i>		
General quality		.13
Good teaching scale		.95
<i>Interaction</i>		
Teaching ability $\times$ Good teaching scale		17.99
Teaching ability $\times$ General quality		.12

(odds ratio = 17.99), were almost 18 times more likely to obtain their degree whenever their score on the good teaching scale increases with one standard deviation.

We also examined the odds ratios for the interaction between teaching ability and general quality. Preservice teachers with a low teaching ability are $1/.12 = 8$ times less likely to obtain their degree within the nominal duration whenever the scores on the general quality scale increases with one standard deviation. Preservice teacher with a high score on teaching ability are $1/.12 = 8$ times less likely to obtain their degree whenever the perceived general quality increases with one standard deviation.

Discussion and conclusion

Research on the factors that predict achievement in teacher education is important to understand how retention in teacher education is best accomplished. In this study, we focused on those factors that predicted university-based preservice teachers' degree completion. To this end, we examined the relationship between preservice teachers' motivation, affective professional commitment, teaching self-efficacy, perceptions of time management and the perceived quality of instruction on the one hand and obtaining a degree within the nominal study duration of 12 months on the other hand. In this section, we first discuss the major findings of the study and then turn to the limitations and directions for future research.

Major findings

The results indicated that of the motives studied here, teaching ability is the most important motive for becoming a teacher in this sample of preservice teachers. This finding is in line with other studies (Fokkens-Bruinsma & Canrinus, 2012a, 2012b; Sinclair, 2008; Watt & Richardson, 2007). Interestingly, teaching ability was a significant negative predictor of degree completion, that is, whenever teaching ability increased with one standard deviation, preservice teachers were less likely to obtain their degree. This finding is surprising, as one would expect a person who is

confident about his or her teaching abilities would be able to teach to finish the teaching education programme within the nominal duration. An explanation for this finding might be that ability was measured through self-assessment. Possibly, preservice teachers may have had an incomplete or incorrect view of what teaching really entails and thus underestimated the time they would have to spend in learning to teach. They therefore would have less time to spend on their studies and were not able to finish within 12 months. An additional explanation could be that these teachers indeed had the skills a teacher needs within the classroom, but had difficulties with the more theoretical courses within the teacher education programme.

Beside this, we found two interaction effects for teaching ability, namely related to good teaching and to general quality. Preservice teachers who scored high on self-perceived teaching ability were much more likely to obtain their degree whenever their score on good teaching scale increased with one standard deviation. As such, perceptions of good teaching may counter the negative relation between teaching ability and obtaining a degree within the nominal duration. This finding once again suggests the importance of good teaching for obtaining a degree within the nominal duration. On the other hand, the interaction effect for teaching ability and general quality suggests that these preservice teachers were less likely to obtain a degree when their perceptions of general quality increased.

Next to teaching ability, we found motives stemming from social utility value, to be a significant predictor of degree completion. This could suggest that the preservice teachers' wishes to shape the future of children and adolescents, enhance social equity and make a social contribution are important for completing the teacher education programme. This finding is in line with for example the study by Jungert et al. (2014). In their study, they also concluded that altruistic motives – which are comparable to our social utility values – are important to enhance engagement during the programme. Since these social utility values are beneficial for degree completion, it seems important to emphasise these values when attracting students to the profession and pay attention to the social utility value of the profession in our teacher education programme. This finding might also be important in the light of selecting students for teacher education programmes² using interviews or, for example, assessment questionnaires. Assessing these social utility values might take a more prominent place in these selection procedures.

The preservice teachers scored above average on affective professional commitment which is important since it has previously been related to engagement to the profession (Fokkens-Bruinsma & Canrinus, 2012a; Roness & Smith, 2010; Sinclair et al., 2006). In our study, we also found affective professional commitment to be significantly related to degree completion. This finding is in line with our hypotheses and with previous studies.

On average, the preservice teachers in this sample perceived themselves as being good at managing their own time. Furthermore, perceptions of time management were a predictor of obtaining a degree within the nominal duration. These findings are in line with previous findings in teacher education (Cemaloglu & Filiz, 2010). As future teachers, it is important for preservice teachers to have excellent time management skills, on the one hand to manage the demands from university and school, on the other hand to be able to teach these time management skills to their pupils.

Overall, the preservice teachers were satisfied with the quality of the teacher education programme. Interestingly, in the interaction model, we found a negative relationship with obtaining a degree within the nominal duration. This finding might

be explained by what Roness and Smith (2010) described as ‘ambivalent’ preservice teachers. These teachers had not yet decided whether or not they wanted to work as a teacher and were more negative on the quality of the course. It might be that this group of preservice teachers dropped out sooner or studied longer than the nominal duration.

Preservice teachers were less satisfied with the attention given to generic skills development in the programme. These skills – skills that enable teachers to work and communicate in groups, and identify and analyse problems – are skills that are important for lifelong learning and as such are important for the continuing professional development of these teachers. There may be several explanations for the low scores on the perceptions of development of these skills. First, it might be that preservice teachers have already developed generic skills during their bachelor programme and thus find generic skills development during teacher education too basic and not adding to their existing knowledge. Second, it might be that our teacher education programme, actually does not explicitly focus on (the development of some of) these generic skills. Third, it might be that preservice teachers did not recognise the aspects in the programme that focus on developing these skills as they may have been embedded in coursework related to teaching methods or their subject. As we found that generic skills are important for preservice teachers, we would like to recommend teacher education programmes and teacher educators to be more explicit about the importance of generic skills in the programme. Furthermore, teacher education programmes need to examine closely whether and how generic skills are developed in the programme and how these practices can be translated to teaching in secondary schools.

Limitations of the study and directions for future research

The results presented here are based on the data of one cohort and one measurement. More longitudinal information would have given us more insight in the stability of the outcomes of this study and would have provided us with information on whether or not preservice teachers’ motivations, affective professional commitment and self-efficacy might be influenced or changed by teacher educators. Future studies should therefore use a design which allows for pre- and post-testing. Ideally, the preservice teachers are followed into the profession potentially resulting in information on long-term effects of teacher education. The findings from the study presented here could be used as a stepping stone in such studies.

Next to this call for more longitudinal data, it should be noted that the findings presented here are limited to university-based preservice teachers. The findings show us how motivated, committed and self-efficacious these future teachers in upper secondary education are, as well as their perspectives on the education provided to them. To fully understand how these aspects are related, and, to have an impact on educational policy, it is important to compare the results with data of preservice teachers who work with a different population of pupils (e.g. working in primary education or higher education, see e.g. Fokkens-Bruinsma & Canrinus, 2014). Using such a perspective provides a broader understanding of how achievement in teacher education programmes may be influenced.

At the same time, this calls for a clear understanding of what ‘achievement’ actually entails. We operationalised achievement in terms of degree completion, that is, obtaining a degree within the nominal duration. This is a limited operationalisation

since it does not distinguish between (a) preservice teachers who had dropped out or preservice teachers who were still in the programme after 12 months and we did not distinguish between (b) preservice teachers who had above-average GPAs or average GPAs in the teacher education programme. In future studies, it is important to distinguish between these three groups – preservice teachers who dropped out, obtained their degree within the nominal duration and were still studying – and to include course grades as indicators of the quality of achievement. By distinguishing these groups and including course grades, we will be able to understand more fully the interrelatedness and influence of variables effecting achievement in teacher education.

Despite the limitations, the presented findings have significant implications for teachers, teacher educators and policy makers. Our study indicated that social utility values, affective professional commitment and perceptions of time management were positively related to higher chances of obtaining a degree within the nominal duration. Given the important role, social utility values play in predicting whether or not preservice teachers obtain their degree within the nominal duration, it is important for policy makers and teacher educators to focus on these values. By doing so, this may enhance the inflow of new teachers into the work field thus lessening the teacher shortage which is likely to come.

In addition to the important role of social utility values, our study indicated the importance of self-perceived teaching ability; it was a significant predictor for degree completion. The same goes for affective professional commitment, which was a significant predictor of degree completion as well. According to Meyer et al. (1993) affective professional commitment is related to the intention to stay in the profession. Our results corroborate this claim in a teacher education programme context. Furthermore, Crosswell and Elliott (2004) indicated the importance of teachers' professional commitment to teacher outcomes and student outcomes. As such, it seems important to promote professional commitment during teacher education. This could be done by making preservice teachers responsible for their own learning and by focusing on their teaching abilities and the intrinsic value of the teaching career.

This study indicated that multiple factors and their interactions can explain variance in preservice teachers' achievement in teacher education. Therefore, we stress that it is important for teacher educators and policy makers to appeal to a range of factors, among which social values, time management, professional commitment, teaching ability and the perceived quality of instruction when trying to enhance achievement.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes

1. In the Netherlands, there are two forms of teaching qualifications for secondary education. The first is a lower secondary qualification or 'grade two' qualification. This qualifies for both the lower levels of preuniversity education and senior general secondary education, and all levels of preparatory vocational secondary education. The second is a full qualification or 'grade one' qualification. This qualifies teachers for all levels of secondary education.

2. Students can enter our teacher education programme whenever they have the right qualifications, i.e. whenever they have a master's degree in the subject they want to teach, or have bachelor's degree in the subject and are enrolled in an educational master programme. As such, a formal selection procedure where students are assessed on, for example, their motivation is not part of our programme. It might be worthwhile to consider the benefits of such as selection procedure for our department.

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