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Comparison Between Primary Teacher Educators' and Primary School Teachers' Beliefs of Primary Geography Education Quality

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Abstract: In this study teacher educators' beliefs concerning primary geography education have been investigated and compared with primary school teachers' beliefs. In this study 45 teacher educators and 489 primary school teachers completed a questionnaire, and nine teacher educators have been interviewed as well. It has been found that teacher educators are more critical about the quality of primary education than the primary school teachers themselves who are generally positive about the quality of primary geography. Teacher educators think that most primary school teachers are sufficiently competent to organise the more basic and simple geography lessons, but somehow lack the ability to use more creative and innovative approaches. Both teacher educators and primary school teachers believe that assessing learning outcomes and colleague support is of limited importance.

Key Words: primary geography education quality, teacher educators, primary school teachers, beliefs

Introduction

Internationally, concerns have been expressed about the quality of geography education in primary schools (e.g. AKOV, 2011; Erebus International, 2008; Ofsted, 2011). Concerns have been expressed with respect to the decline of pupil achievement in, and motivation for the subject of geography (e.g. Catling, Bowles, Halocha, Martin, & Rawlinson, 2007). A weakening position for geography is reported within the primary education curriculum in general (e.g. Maude, 2009); manifesting itself, for example, in a lack of time for geography education in primary schools (Catling, et al., 2007). The non-ministerial department of the government in the United Kingdom (Ofsted, 2011) suggested that inhibition of improvements in primary geography education can be attributed, amongst other reasons, to the lack of content knowledge among primary school teachers.

In the Netherlands there are also concerns about the quality of geography teaching in the primary school. (Dutch Inspectorate of Education, 2000, 2011; van der Schee & van der Vaart, 2005). International concerns about primary school teachers' lack of geography content knowledge seems also to apply to The Netherlands. Pupils' achievement has been deemed disappointing during more than two decennia (Notté, Van der Schoot, & Hemker, 2010) and education time for geography education (as for the subject of history) is declining and currently limited to sixty minutes per week (van der Schoot, 2008; van Weerden, &

Hiddink, 2013). To compare, in Dutch primary schools teachers spend 2,5 hours weekly of training reading skills and 5 hours for arithmetic. The reduction of education time for geography is also found for primary school teacher training institutes. More than four to ten teacher educators believe that after 2000 less education time was spent on geography (Blankman, van der Schee, Volman, & Boogaard, 2015). In line with the difference in education time, in The Netherlands the number of teacher educators who are geography specialists is limited compared to the number of teacher educators who are arithmetic or native language specialists. As a supposed effect, relatively limited curriculum attention is devoted to preparing pre-service school teachers to teach non-core subjects compared to core subjects. Dutch teacher educators criticise their primary pre-service teachers' lack of geography content knowledge and to a lesser extent their lack of pedagogical content knowledge (Blankman et al., 2015). Teacher educators reported that less than 3/10 primary pre-service teachers were able to pinpoint 300 topographic names (selected for primary education) on a map at the end of their training. This belief is in line with the finding that only half of Dutch primary pre-service teachers pass the geography knowledge entrance test at the beginning of their course (Notté & Baltus, 2011). The level of this entrance test is only slightly higher than the level of the geography test for pupils at the end of primary school. Concerning pedagogical content knowledge, teacher educators believe that about six out of ten of their primary pre-service teachers teach pupils to ask geographic questions, teach pupils to approach the world around them from different perspectives, and use maps and atlases during their practice in primary school. Dutch teacher educators are also concerned about the lack of professional examples of geography lessons within primary schools (Blankman et al, 2015).

Dutch primary school teachers seem to be more positive about the quality of their own geography lessons than the concerns expressed above about the lack of geography lesson quality suggest (Authors, to be published). This finding seems to be in line with studies investigating teachers' and students' perceptions about the education practice which showed that teachers' perceptions often deviate from pupils' and students' perceptions (e.g. den Brok, Bergen, & Brekelmans, 2006). The concerns mentioned above suggest the need for a detailed investigation of these issues and especially of the current quality of geography education as it is perceived by stakeholders involved: teacher educators and primary school teachers.

This study is conducted for the following reasons. The majority of studies investigating learning environments (including teacher behaviour) have been conducted in secondary education, and mainly in the context of core subjects, using teachers' and pupils' perceptions and beliefs (e.g. Allen & Fraser, 2012; Wei & Elias, 2011). Additionally, comparing teacher educators' beliefs as alleged geography education specialists (as the observers) with those of primary school teachers' beliefs (as the practitioners) is expected to give insight into similarities and differences between these different players. These insights can help to understand different viewpoints in discussions about the quality of geography teaching in the primary school, and perhaps about other subjects (such as science) as well.

A more practical reason for this study is that comparing teacher educators' beliefs with primary school teachers' beliefs can support teacher educators to reflect on the quality of primary pre-service teachers' learning environment. In addition, this can support their behaviour as trainers of future primary school teachers. Indirectly this may also increase the quality of the teacher training institute (van Neygen, & Belmans, 2011). Results of this study can support primary school teachers to deepen their reflection on their current teaching of geography. Teacher educators' beliefs can function as source of knowledge about how to teach geography education for primary school teachers and for primary pre-service teachers.

The aim of this study is to investigate the beliefs of teacher educators regarding the quality of geography teaching in the primary school including teacher behaviour, and how

these beliefs compare to those of primary school teachers' beliefs. In the next section, a description will be given about how these beliefs are defined, and on which aspects of teacher educators' and primary school teachers' beliefs this study will focus.

Conceptual Framework

Beliefs about Primary Geography Education Quality

There is a consensus that teachers' beliefs are constructions that describe the structure and content of a teacher's thinking (Bryan & Atwater, 2002; Pajares, 1992). Beliefs influence teachers' perceptions and judgments as well as teachers' personal ideas of teaching and knowledge (Errington, 2004; Ertmer, 2005; Pajares 1992) and, for example, teachers' instruction quality (OECD, 2009). Teacher beliefs seem to be positively influenced during a teacher training program (Boz, 2008). Belief is defined for this study as an 'individual judgement of the truth or falsity of a proposition, a judgement that can only be inferred from a collective understanding of what human beings say, intend, and do' (Mansour, 2009, p.316). Rawling (2001) noted that beliefs about geography education probably change over time, possibly because over a number of decades, goals and aims of school geography education have changed. For example, there is now a stronger emphasis on using geography education for strengthening the sense of citizenship. Van der Schee (2014) concluded that over time, the position of primary geography education within schools has become more problematic, including the quality of primary school teachers' training.

Van der Schee (2014) suggested that teaching geography should be limited to primary school teachers with a qualified training in geography and geography education. These considerations seem to contradict Dutch primary school teachers' beliefs that they can teach geography competently (Authors, submitted for publication). Morley (2012) found that English student primary school teachers had an information-oriented perception of geography and did not appear to fully appreciate the breadth of the subject. Preston (2014) found that Australian early career; in-service teachers have conceptions of primary geography similar to those of primary pre-service teachers, demonstrating a simple understanding of what geography is. On the other hand, Preston also found that experienced primary school teachers demonstrated a much broader, more complex understanding of geography. A Dutch research project found that the majority of Dutch primary school teachers were positive about their own functioning of teaching geography (Notté et al., 2010), but more in-depth interviews showed that this positive perception also reflected a simpler understanding of geography education (Authors, to be published). This finding suggests a more simple understanding of geography among teachers as practitioners, aberrant from a more complex understanding of geography among teacher educators as experts. This suggestion is supported by the study of Lemon and Garvis (2013) who found that a considerable number of Australian primary pre-service teachers had little or no personal and professional understanding of arts (also a marginalised subject within primary schools).

In this study teacher educators have been interviewed concerning their beliefs about the general quality of geography education, and the results have been compared with the beliefs of primary school teachers. This is based on the assumption that teachers are the main factor of education quality. Given that geography education should lead to knowledge development among pupils, teacher educators' and primary school teachers' beliefs concerning the importance of achieving cognitive and affective learning outcomes has been part of this study. Beliefs about the importance of assessing these learning outcomes is also part of this study. Assessments can support education quality using the feedback teachers and pupils obtain from assessment outcomes. In addition to this function, determining pupils'

learning outcomes is also an important tool for education quality management within primary schools and for external accountability (e.g. Government of Education, 2008; Shepard, Kagan, & Wurtz, 1998).

Because colleague support among teachers is regarded as an essential component of school effectiveness and teacher enhancement (Doppenberg, Bakx & den Brok, 2012; Schechter, 2012), teacher educators' and primary school teachers' beliefs about the importance of colleague support was also part of this study.

Many governments focus on increasing learning outcomes for core subjects while primary school teachers are responsible for the organisation of a wide range of subjects. For this reason, beliefs about the importance of geography as a non-core subject within the wide range of subjects within primary school curricula was included.

Figure 1 shows the geographical aspects under investigation in this study which include (a) general quality of geography education, (b) teacher subject knowledge and behaviour, importance of (c) learning outcomes and (d) assessing these, (e) colleague support, and (f) emphasis on geography education in the curriculum. The lines visualise possible relationships between geography aspects selected for this study. In the next sections, these selected aspects will be described in more detail.

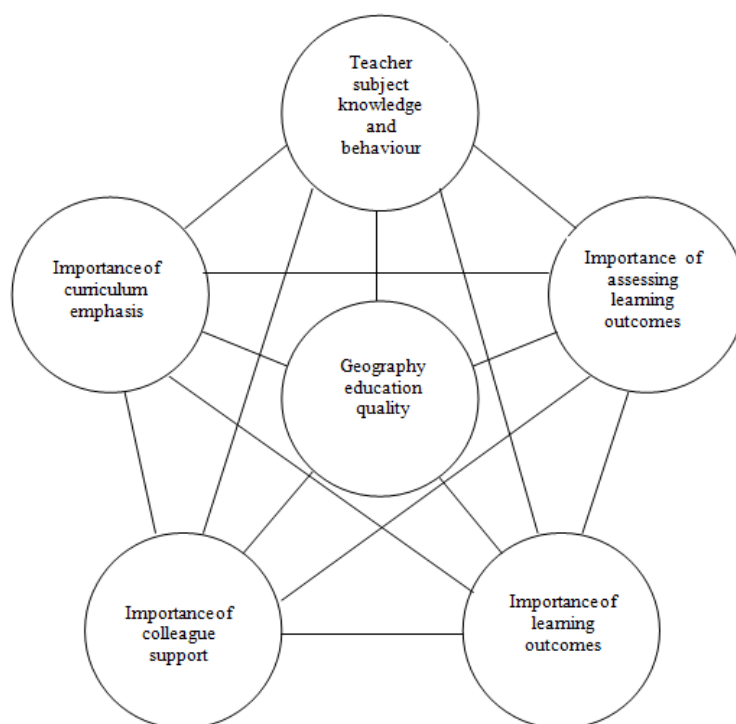


Figure 1: Geography education aspects selected for this study including visualised possible relationships.

Beliefs Regarding Primary School Teachers' Ability to Teach Geography

This study investigated beliefs about primary school teachers' ability to teach geography. Teachers' ability of how to teach geography is related to their level of knowledge about the content and how to teach that content, and to their expertise (Verloop, van Driel, & Meijer, 2001). The belief that teachers ability is probably influenced by beliefs about teachers' level of content knowledge is based on the assumption that content knowledge is extremely important for teachers' ability of teaching geography (Walshe, 2007). Unfortunately, there are serious concerns about primary school teachers' level of content

knowledge for the subject of geography (Bell, 2005; Notté & Baltus, 2011; Ofsted, 2011). Given this background, we wanted to compare the insights of primary school teachers and of teacher educators. The primary school teachers may indeed lack strong content knowledge but still have a lot of practical teaching experience.

The teacher educators are assumed to have a strong content knowledge but their understanding of teaching geography is mostly theoretical and not based on a lot of practical experience. Bringing the insights of the two together could lead to a fruitful dialogue and fresh ideas to improve geography education.

Beliefs Regarding the Importance of Learning Outcomes and Assessments

Investigating beliefs concerning the importance of learning outcomes and of assessments has been selected for this study because beliefs about learning outcomes indirectly mirror beliefs about geography education. Learning outcomes can be distinguished as both cognitive and affective (e.g. Creemers & Kyriakides, 2010). Concerning cognitive learning outcomes, during the last decades, disappointing outcomes among Dutch primary pupils have been observed repeatedly (Notté et al., 2010). Van der Vaart (2001) noted concerning cognitive learning outcomes, that both surface learning outcomes (e.g. toponyms) and deep learning outcomes (e.g. theory of plate tectonics) are important to achieve long term learning outcomes for geography. Despite concerns as described above about the currently achieved levels of learning outcomes among Dutch pupils, it can be expected that learning outcomes are believed to be important because an important function of education is to support pupils to achieve learning goals. In addition pupils vary in their motivation for geography, perceiving that their motivation for geography is, to a large extent, related to the quality of their teachers' teaching which is perceived as varying (Bent, Bakx, & den Brok, 2014).

Beliefs about the importance of assessing learning outcomes could gain insight into perceived importance by teacher educators and primary school teachers of monitoring pupils' learning outcomes. The importance of assessing pupils' learning outcomes is highlighted in national policies, among other countries, also in the Netherlands. Assessments can support education quality using the feedback teachers and pupils obtain from assessment outcomes. In addition to this function, determining pupils' learning outcomes is also an important tool for education quality management within primary schools and for external accountability (e.g. Government of Education, 2008; Shepard, Kagan, & Wurtz, 1998). In practice, Dutch inspectorates' control on pupils' learning outcomes is exclusively based on the core subjects (Government of Education, 2008). Relatively little is known about achievement of learning goals for non/core subjects. Our own investigation in this area showed that Dutch pupils perceived that achieving geography learning goals is important but criticised their limited degree of achievement of these goals (Bent et al., 2014).

Beliefs Regarding the Added Value of Colleague Support

Beliefs about the added value of colleague support help to determine the extent to which teachers prefer to learn from their colleagues or believe their colleagues can support them to increase their geography education quality. In discussing the status and nature of geography education, investigating beliefs concerning the role of colleagues is important because relationships among teachers are a prerequisite for school and class improvement and make knowledge sharing and innovative practice possible (Fullan, 2001). Colleague support

among teachers is regarded as an essential component of school effectiveness and teacher enhancement (Doppenberg et al., 2012). Catling and Willy (2009), among others, suggest that geography is a complex subject to learn because primary education students have to learn to combine physical and human processes in space and time. Especially for a complex subject like geography, the added value to organise colleague support can help teachers to increase the quality of their teaching. The extent to which teacher educators and primary school teachers share this suggestion has also been investigated in this study.

Despite the added value of colleague support, in practice, Dutch primary schools' colleague support is limited extent (Doppenberg et al., 2012). The question may be asked how teacher educators' beliefs about the added value of colleague support for teaching a non-core subject such as geography compares to that of primary school teachers against the background of, on the one hand the complexity of the subject, on the other hand the limited use in practice of organised colleague support.

Beliefs Regarding the Importance of the Subject in the Curriculum

Primary geography is one of many subjects primary school teachers are responsible for to teach. Mainly, non-specialist primary school teachers teach the entire primary curriculum. Martin (2008) concludes that in practice, not all primary school teachers succeed in the challenging task to teach primary geography education at a sufficient level in addition to the large number of other subjects. During recent years, the Dutch Government has focused on increasing the quality of teaching of primary geography. The emphasis on improving teacher behaviour is particularly focused on guiding them to apply direct instruction, organising a rich content, and pronouncing high expectations. The Dutch Government has also focused on increasing pupil achievement in core subjects as important for overall primary education quality. The Dutch Government has also focused on increasing pupil achievement in core subjects as important for overall primary education quality. . While positive in itself, this had led to a growing concern that the importance and quality of non-core subjects, such as geography, is coming under pressure. Bearing in mind that both the primary pre-service teachers education curriculum and primary education curriculum contain a wide range of subjects, beliefs concerning the importance of primary geography education in the curriculum of primary schools will be investigated in the present study.

Research Questions

This study is conducted to gain insight into similarities and differences between teacher educators' and primary school teachers' beliefs. For this very reason, we wish to investigate teacher educators' beliefs about the quality of geography teaching in the primary school including teacher competences. We will also seek further qualitative clarification of these beliefs. The following research questions have been used in this investigation:

What are teacher educators' and primary school teachers' beliefs concerning geography education and geography teaching – i.e. primary school teachers' ability, and beliefs concerning the importance of (assessing) learning outcomes, the different types of learning outcomes, colleague support, and the relative importance of the subject in the curriculum?

Are there any differences between teacher educators' and primary school teachers' beliefs concerning the above mentioned aspects, and if so, what differences exist?

How are beliefs about these aspects related to each other within each group and how do these relations differ between the two groups?

How do teacher educators clarify their beliefs concerning the above mentioned aspects?

Method

This study is constructed on the basis of a mixed method design. First of all, quantitative surveys were conducted with two different samples of teacher educators and primary school teachers. In addition, a qualitative study has been carried out consisting of in-depth interviews with teacher educators focusing on the key topics from the quantitative study.

Such a study was expected to provide more clarification of the teacher educators' beliefs expressed through the quantitative study (e.g. Tashakkori, & Teddlie, 2003; Creswell, 2013). This design is deemed to be appropriate because quantitative and qualitative methods complement each other and allow for a more robust analysis. (Tashakkori, & Teddlie, 1998).

Participants

In the quantitative phase of the study 45 teacher educators and 489 primary school teachers participated. The group of 45 teacher educators represents 83% of the total of 54 KNAG (Koninklijk Nationaal Aardrijkskundig Genootschap) registered primary geography teacher educators in the Netherlands. The group consisted of 13 (29%) female and 32 (71%) male teachers. The average age of the respondents was 49 years. The average number of years of experience as a teacher in universities of applied sciences was 14 years, varying from one to thirty-six years. The teacher educators usually observe about eight geography lessons in schools per year: six primary pre-service teacher geography lessons a year ($M=5.8$; $sd=5.6$), and two primary teacher geography lessons per year ($M=2.1$; $sd=7.3$). Of the total number of responding teacher educators, 41 (91%) finished a study for geography of whom 17 (38%) finished a university for applied science study for geography and 24 (53%) finished a university study of geography. Four teacher educators have not finished yet a study for geography.

The sample size of primary school teachers was 489 with all of them working in the four highest grades of Dutch primary schools (pupils from eight to twelve years of age). The highest grade levels were selected because within these levels geography is a formal part of the curriculum as part of globally orientated subjects (e.g. history and biology). An invitation to participate in the study including a link to the online questionnaire was randomly sent to selected primary schools. The choice was made to select the first and fifth school of every ten schools on a government list of all primary schools within the Netherlands¹. As a result, 436 schools were contacted. The participating primary school teachers agreed to their data being used for research purposes. From the respondents, 307 (63%) were females and 182 (37%) males. The average age was 39 years and their average number of years of experience as a teacher in primary education was 17 years, with the range varying from one to forty-two years. The two samples described above were independent from each other and direct associations between the samples can therefore not be assumed.

¹ For this study, we made use of the DUO list (Dienst Uitvoering Onderwijs) of primary schools within the Netherlands, made available by the Dutch Ministry of Education.

In the second qualitative phase of this study, nine randomly selected teacher educators teaching geography education participated, three females (33%) and six males (67%), with an average age of 52 years. The relatively high age of the teacher educators who participated in both the quantitative and qualitative part of this study can be explained by the fact that teacher educators in general had a career in other types of education before starting as teacher educators.

Instruments and Procedure

A questionnaire was used for the assessment of teacher educators' and primary school teachers' beliefs. This questionnaire consisted of six subcategories, assessing (1) overall beliefs regarding the primary geography lesson quality; and beliefs of (2) primary school teachers ability to teach geography lessons, (3) the importance of learning outcomes; (4) the importance of assessments; (5) the importance of colleague support during the organisation of geography education, and (6) the importance of the subject in comparison to other subjects. The items of the questionnaire used a 5 point Likert scale for primary school geography quality (quality ranking 1-5) and a five point Likert scale for response to the other items, ranging from (1) I strongly disagree to (5) I strongly agree. Table 1 presents the constructed clusters of items including a description of the clusters, examples of items, and the Cronbach's alpha coefficients. The items presented in Table 1 are part of the primary school teachers' questionnaire. The items in the teacher educators' questionnaire were based on the primary school teacher questionnaire and were, if necessary, slightly adapted to the teacher training situation. For example, the item presented in cluster 2 from the primary school teacher questionnaire "I believe the way of giving instruction motivates pupils for the geography lesson" has been adapted for the teacher educator questionnaire as follows: "I believe the way in which primary school teachers give instruction motivates pupils for the geography lesson". The focus of both questionnaires was to investigate beliefs concerning primary geography education within primary schools.

Cluster of items	Description	Examples of items
α = Cronbach's alpha)		
(1) general geography lesson qualification (1 item)	perception about the geography lesson quality	I rate geography lesson quality within primary schools from one to five.
(2) capabilities to teach geography education	beliefs about primary education teachers' capabilities to teach geography education	The way in which primary education teachers gives instruction motivates pupils for the geography lesson.
(8 items, α = 0,70 teacher educator) (8 items, α = 0,74 primary education teacher)		
(3) belief towards the importance of surface learning (3 items, α = 0,68 teacher educator) (3 items, α = 0,69 primary education teacher)	emphasis on the importance of surface learning	Learning toponyms is important in geography.

(4) importance of assessments (2 items, $\alpha=0,69$ (2 items, $\alpha=0,70$	beliefs concerning the importance of assessment to learning teacher educator) primary education teacher)	Tests are good indicators of what pupils have learned during geography lessons.
(5) importance of colleague support (3 items, $\alpha=0,76$ (3 items, $\alpha=0,76$	beliefs concerning the importance of colleague support during the organisation of geography education teacher educator) primary education teacher)	Discussing geography learning results with colleagues improves my geography education quality.
(6) importance of curriculum emphasis on geography (3 items, $\alpha=0,71$ (3 items, $\alpha=0,69$	beliefs concerning emphasis on the basic subjects as compared to geography education teacher educator) primary education teacher)	The current accent on arithmetic and native language influences geography education quality negatively

Table 1: Clusters for teacher educators' and primary education teachers' beliefs regarding primary geography aspects

Additionally, a semi-structured interview guideline was developed for the teacher educators, consisting of 12 open questions concerning the concepts measured in the quantitative questionnaire (Table 2). Six open ended questions in the interview guideline explored teacher educators' beliefs concerning primary school teachers' current levels of knowledge and behaviour to teach geography education. Four other open ended questions explored teacher educators' beliefs concerning the importance of assessments and of pupils' cognitive and affective learning outcomes. Lastly, two open ended questions explored teacher educators' beliefs about the importance of colleague support and curriculum emphasis on primary geography education.

Examples of questions
Theme 1: <i>primary education teachers' capabilities to teach geography</i>
Do you believe primary education teachers' current content knowledge is sufficient to teach geography properly? Do you believe primary education teachers' way of teaching geography stimulate their pupils to learn geography?
Theme 2: <i>importance of pupils' learning outcomes and of assessments</i>
What do you believe about the current manner of assessing pupils' learning outcomes? Do you believe pupils achieve deep learning outcomes?
Theme 3: <i>importance of colleague support and curriculum emphasis on primary geography education</i>
Do you believe colleague support is of added value for teaching geography? Do you believe the current accent on pupil achievement in core subjects influences geography education quality?

Table 2: Examples of interview questions per theme/topic

Analysis

For the quantitative part of this study, first, descriptive analyses (mean scores and standard deviations) were conducted to get a view on teacher educators' and primary school teachers' beliefs of primary geography education aspects (RQ 1). Next, using a t-test for independent groups of samples, differences between both groups were tested statistically (RQ 2). Correlations were calculated between teacher educators' beliefs and between primary school teachers' beliefs to investigate associations within and between the different beliefs (RQ 3). Finally, using the Fishers' z-test for the groups of samples, correlations were compared between teacher educators and primary school teachers.

For the qualitative part of the study, the interview results were analysed by searching for in-depth clarifications of teacher educators' beliefs which were found in the quantitative part of this study. Interview data were transcribed, coded, and analysed according to the guidelines set forth by Miles and Huberman (1994) and using the Atlas ti software program.

Because of the semi-structured protocol design, some questions (e.g. "Do you believe the current level of geography knowledge of primary school teachers is sufficient for teaching geography") elicited a response that lasted several minutes and addressed several constructs. As a result, responses often required multiple codes. Combining categories of codes resulted in general trends and patterns in the data. For example, the codes for "colleague support from my colleague teachers", and "colleague support from the principal" were combined in a higher-level node labelled "colleague support". The results of the coding process were validated by two senior researchers who checked the codes of three randomly chosen interviews. Validation of the research data showed that the results of the coding process were consistent and that coding was satisfactorily performed by the first author. In the results section, both common and different beliefs among teacher educators are described, representing general trends and patterns in the data.

In describing teacher educators' beliefs, we do not pretend to be complete in giving all the details mentioned by the interviewees.

In section 5.1 the outcomes for the teacher educators' beliefs from the quantitative research method will be described. Section 5.2 discusses the teacher educators' beliefs investigated with a qualitative research method including quotes. In section 5.3 primary school teachers' beliefs investigated with use of the quantitative research method, will be presented.

Results

In this section, teacher educators' and primary school teachers' beliefs concerning geography education aspects are presented.

Teacher Educators' Beliefs of Primary Geography Education Aspects: Quantitative Results

Table 3 shows the mean scores and standard deviations of teacher educators' and primary school teachers' scores on the six aspects. Next to this, statistical differences between teacher educators' and primary school teachers' perceptions, are presented. For this study, teacher educators' and primary school teachers' beliefs were interpreted as strong when $M \geq 3$ and have been valued as weak when $M < 3$ on a five point scale.

	Teacher educator		Primary education teacher		t	df	p
	N=45		N=489				
	Mea n	sd	Mea n	sd			
<i>Beliefs of primary school geography aspects</i>							
(1) general geography education quality	2.77	.55	3.60	.47	10.93	532	.00*
(2) teacher capabilities to teach geography education	3.21	.53	3.22	.60	0.11	532	.91
(3) importance of surface learning	3.44	.95	3.88	.77	2.97	49,46	.01*
(4) importance of assessments	2.60	1.11	2.29	.82	-1.79	48,50	.08
(5) importance of colleague support	2.77	1.29	2.02	.87	-3.79	47,73	.00*
(6) importance of curriculum emphasis on geography	3.59	1.13	2.34	1.02	-7.82	532	.00*

**Differences statistically significant at the .01 level;

* Differences statistically significant at the .05 level.

Table 3: Teacher educators' and primary education teachers' beliefs concerning primary geography education aspects

The findings concerning teacher educators' beliefs presented in Table 3 show that teacher educators are more critical about geography lesson quality than primary school teachers. Teacher educators are moderately positive about primary school teachers' competences for organising geography education. Teacher educators believe that surface learning is important but believe that assessing pupils' achievements is unimportant. Also, the importance of colleague support is believed to be unimportant. Lastly, teacher educators believe that curriculum emphasis on geography is important.

In Table 4, moderately strong correlations are found between teacher educators' believed importance of colleague support and believed importance of assessments ($r=.58$), and importance of colleague support and teacher competences for organising geography ($r=.55$). Teacher educators, who believe that assessing pupils' learning outcomes is more important, also are more likely to believe that it is important that teachers support their colleagues to achieve these learning outcomes. Teacher educators who believe that primary school teachers are more capable to teach geography also are more likely to believe that it is important to support colleague teachers in their teaching geography. Teacher educators' beliefs regarding the importance of curriculum emphasis on geography are moderately positively correlated to believed importance of assessments ($r=.48$). Teacher educators who believe that it is more important to test pupils' learning outcomes also are more likely to

believe that the current accent within primary education on core subjects offers pressure on the position of geography within the primary school curriculum.

	(1)	(2)	(3)	(4)	(5)	(6)
(1) general geography education qualification	--					
(2) primary teacher capabilities for organising geography	.12	--				
(3) importance of surface learning	-.16	.24	--			
(4) importance of assessments	-.18	.41**	.30*	--		
(5) importance of colleague support	-.04	.55**	.28	.58**	--	
(6) importance of curriculum emphasis on geography	-.32*	.15	.16	.48**	.35*	--

** Correlation statistically significant at the .01 level (2-tailed);

* Correlation statistically significant at the .05 level (2-tailed).

Table 4: Correlations of selected scales for teacher educators (N = 45)

Primary School Teachers' Beliefs of Primary Geography Education Aspects: Quantitative Results

The findings concerning primary school teachers' beliefs are also presented in Table 3. Primary school teachers are positive about the general quality of geography education and about their competences for organising geography education. In addition, primary school teachers are positive about the importance of surface learning but believe that assessing learning outcomes and colleague support is unimportant. Lastly, primary school teachers also believe that curriculum emphasis on geography is unimportant.

Table 5 indicates moderately weak correlations for primary school teachers' beliefs concerning their competences for organising geography lessons and beliefs concerning lesson quality ($r=.31$), and beliefs regarding the importance of assessments ($r=.26$). The importance of colleague support is positively correlated with the perceived importance of assessments ($r=.27$).

Lastly, perceived importance of curriculum emphasis on geography is positively correlated with primary school teachers' beliefs regarding the importance of colleague support ($r=.24$) but negatively correlated with general geography education quality ($r=-.23$). This finding suggests that teachers, who believe that geography education is of high(er) quality, also believe that the current emphasis within primary education on core subjects offers less pressure on the position of geography within the primary school curriculum.

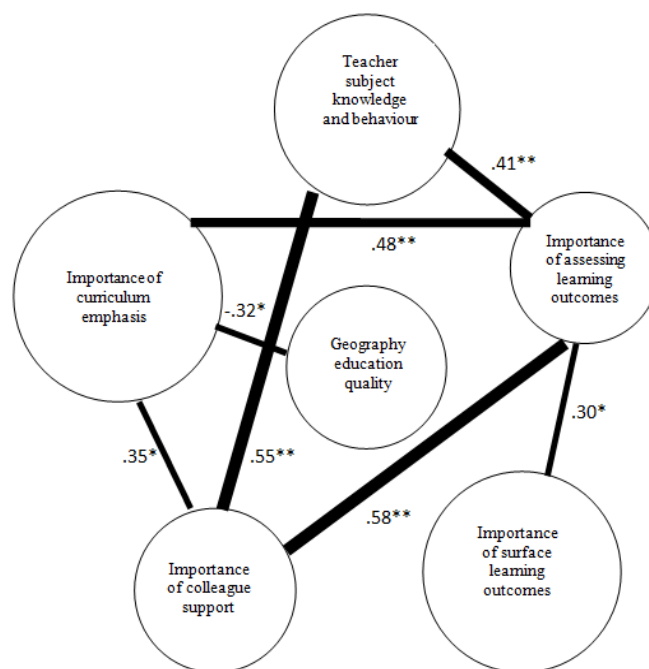
	(1)	(2)	(3)	(4)	(5)	(6)
(1) general geography education qualification	--					
(2) primary teacher competences for organising geography	.31**	--				
(3) importance of surface learning	.02	.23**	--			
(4) importance of assessments	.09*	.26**	.14**	--		
(5) importance of colleague support	-.12**	.17**	.05	.27**	--	
(6) importance of curriculum emphasis on geography	-.23**	-.06	-.01	.08	.24*	--

** Correlation statistically significant at the .01 level (2-tailed);

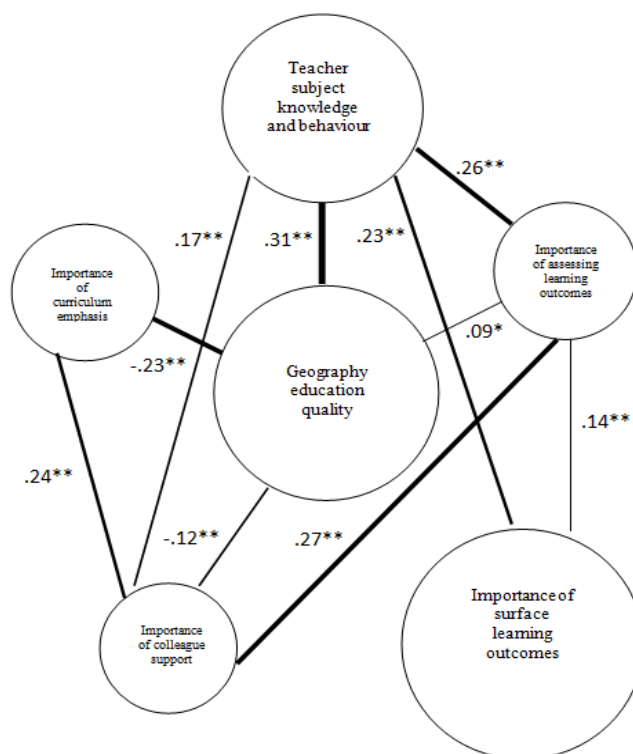
* Correlation statistically significant at the .05 level (2-tailed).

Table 5: Correlations of selected scales for primary education teachers (N = 489)

In Figure 2 the quantitative results for the scores for the different beliefs and their correlations are summarised and compared. In the Figure, teacher educators' and primary school teachers' beliefs are presented in the circles. The diameter of the circle visualises the strength of the score. In addition to this, the lines present the relationships found between beliefs concerning individual primary geography education aspects. The thickness of the lines visualises the strength of the correlation found. In general the statistically significant correlations found between beliefs about different aspects among teacher educators were strong in contrast to the weak correlations found among teachers' beliefs.



Teacher educators' beliefs



Primary education teachers' beliefs

** = Correlation is statistically significant at the .01 level (2-tailed);
 * = Correlation is statistically significant at the .05 level (2-tailed).

Figure 4.2: Teacher educators' and primary education teachers' beliefs

Teacher Educators' Beliefs of Primary Geography Education Aspects: Qualitative Results

In the next sections, teacher educators' clarifications for their beliefs are described and illustrated with quotations. The aim of the interviews was to obtain better understanding of teacher educators' beliefs. The quotes in this section represent the beliefs of the teacher educators participating in this study.

General Geography Lesson Qualification

In this section we searched for in-depth clarifications about why teacher educators were critical of the quality of geography teaching in the primary school. Teacher educators were unanimous in their criticism of primary geography education quality in the quantitative study because they believed that the great majority of primary school teachers organise geography education lessons of insufficient quality. Teacher educators pointed out in the interviews, however, that they have possibly underestimated the quality because they do believe that a small minority of teachers organise high quality geography lessons. As a teacher educator pointed out:

“I have observed excellent lessons in which teachers were capable to incite their pupils for deep learning. But during the majority of lessons, pupils only learn to find an answer in a text fragment.”

Teacher educators thought that the problematic quality of geography education is similar to that of history and biology education. They pointed out that teaching geography,

history and biology as separate subjects offers more opportunities to achieve deeper learning outcomes for pupils compared to integrating these subjects as science within primary schools. Teacher educators believed that emphasising the “geographic way of thinking” next to other perspectives, supports pupils to learn to think in a “multi perspective” way. A teacher educator stated:

“The risk of integrating subjects is that pupils do not distinguish between a spatial versus for example a historic way of analysing what they observe.”

Primary Teacher Competences for Organising Geography

In this section we searched for in-depth clarifications about why teacher educators were positive about primary school teachers’ capabilities to teach geography. Teacher educators believed that geography lesson quality depends on primary school teachers’ competences for organising geography lessons. All teacher educators criticised the general lack of subject knowledge and the absence of competences for organising more complex teaching methods among a great majority of primary school teachers. Teacher educators, however, believed that primary school teachers’ general competences for teaching geography education were, most of the time, sufficiently developed under teacher educators’ guidance during their teaching education period. Teacher educators believed that every primary school teacher is competent to organise a simple geography lesson. They described examples of primary school teachers with limited content knowledge who nevertheless were capable to organise geography lessons of a sufficient quality. As a teacher educator pointed out:

“There are several examples of sufficiently competent primary school teachers who teach geography lessons despite their doubtful level of subject knowledge.”

Teacher educators believed that primary school teachers’ attitude to a subject is much more important than their subject specific knowledge level. The suggestion has been made that those primary school teachers who realise the added value of geography education for their pupils’ everyday lives are more intrinsically motivated and more capable of organising high quality geography lessons.

Learning Outcomes and Assessments

In this section we searched for in-depth clarifications about why teacher educators were positive about the importance of achieving learning outcomes and more critical about the importance of assessing these learning outcomes. Teacher educators believe that a combination of affective and cognitive learning goals needs to be the focus during geography lessons. As a teacher educator pointed out :

“Geography lessons have to stimulate pupils in an attractive and stimulating way. Only then pupils are motivated to learn to think geographically.”

Teacher educators believed that motivating pupils for geography can be enhanced by telling them factual knowledge. Teacher educators believed, however, that during the majority of geography lessons pupils do not get the opportunity to integrate their achieved factual knowledge with conceptual, let alone, theoretical knowledge. Teacher educators criticised the over emphasis on surface orientated goals for most students as opposed to deeper surface oriented learning goals for the majority of pupils, and the lack of deep(er) oriented learning goals for those pupils who want or need this. Teacher educators pointed out that high quality geography education should contain deep(er) learning activities at different cognitive levels:

“The majority of teachers organise most lessons at a uniform level and neglect to organise multi-level based lessons with different cognitive levels.”

Teacher educators were doubtful about the added value of the current assessment practice, criticising the inefficient way of assessing learning outcomes often using text book structured assessments. Teacher educators believed that the current practice originates in primary school teachers’ lack of knowledge about learning goals their pupils should achieve. As a teacher educator mentioned:

“I believe that teachers need to think more carefully about what they wish their pupils should learn. Only when teachers are clear about what they expect their pupils to learn, their pupils will be able to achieve those learning outcomes.”

Teacher educators preferred high(er) quality of assessment and believe that better assessments would add value.

Importance of Colleague Support

In this section we searched for in-depth clarifications about why teacher educators were critical about the added value of colleague support. Teacher educators were divided about whether colleague support will increase the quality of primary geography lessons. The majority believed that colleague support is of added value when it goes beyond agreeing upon the curriculum program elements among colleagues. About half of teacher educators believed that it would be desirable for primary school teachers to specialize themselves in a non-core subject and be responsible for teaching that subject to both their own and colleagues’ pupils. A teacher educator expressed this as follows:

“My opinion is that it is of added quality for primary education to stimulate teachers to specialise in teaching specific subjects and make them responsible to teach that subject also for their colleagues’ pupils.”

Importance of Curriculum Emphasis on Geography

In this section we searched for in-depth clarifications why teacher educators believe that the curriculum emphasis on geography is important. Teacher educators believed that the Dutch Governments’ emphasis on learning outcomes for core subjects has a strong negative influence on the quality of geography education. As a teacher educator stated:

“The exclusive control of the Inspectorate of Education on core subjects’ learning outcomes degrade geography to a kind of teacher dependent hobby. Pupils are completely dependent on their teachers’ motivation to teach the subject at all, let alone, at a sufficiently high quality level.”

All teacher educators spontaneously criticised the absence of an external stimulus by the Dutch Inspectorate of Education for achieving higher learning outcomes for geography.

Comparing Various Results

Comparing teacher educators’ quantitatively and qualitatively beliefs offers further insight into teacher educators’ beliefs. Teacher educators appeared to be more nuanced in their qualitative beliefs than suggested by their responses in the quantitative study. It was found that teacher educators believed that assessing pupils’ learning outcomes is not important ($M=2.60$; $sd=1.11$). During the interviews teacher educators indicated that they do not believe that the current assessment practice is of added value because of the lack of

assessment quality. Nonetheless, teacher educators believed that high quality assessment would indeed be of added value.

Another example of further insights is the following. Teacher educators believed that colleague support is of limited importance ($M=2.8$; $sd=1.3$). However, during the interviews teacher educators indicated that superficial ways of support are of insufficient added value. Nevertheless, teacher educators believed that it would indeed be of value when primary school teachers would support their colleagues professionally, for example, by teaching geography to their own pupils and also to their colleagues' pupils.

When comparing correlations of aspects concerning teacher educators' beliefs found in this study with those of primary school teachers' beliefs, differences were found between these two groups. A statistically significant stronger correlation was found among teacher educators' beliefs concerning three aspects:

the general geography education quality ($z=2.78$; $p=.01$)

the importance of colleague support ($z=2.40$; $p=.02$).

the importance of curriculum emphasis on geography ($z=2.75$; $p=.01$).

Conclusion and Discussion

This study has investigated teacher educators' beliefs about the quality of geography teaching in the primary school including their beliefs about the importance of geography education aspects and has compared their beliefs with those of primary school teachers' beliefs. Teacher educators are critical about the quality of geography teaching in the primary school; a finding which corresponds with pupils' perceptions (Bent et al., 2014). The findings of this study suggest that teacher educators' beliefs in general are similar to pupils' perceptions about the quality of geography teaching in the primary school and the importance of education aspects (Bent et al., 2014). Interestingly, perceptions and beliefs of teacher educators and pupils as observers about the current geography education practice differ from the practitioners' beliefs (i.e. the primary school teachers). A possible explanation for the more critical beliefs of teacher educators about primary geography education quality is that teacher educators' knowledge base about content knowledge and teaching strategies is stronger compared to that of primary school teachers. The finding that primary school teachers are more positive about primary geography compared to teacher educators' and pupils opinions, is in line with learning environment studies. In these studies was also found that primary school teachers make a more favourable judgment about the learning environment than pupils do (e.g. den Brok, Levy, Rodriquez, & Wubbels, 2002; Levy, Wubbels, den Brok, & Brekelmans, 2003).

Teacher educators believe that primary school teachers are sufficiently competent to organise simple geography lessons. Primary school teachers themselves are also positive about their ability to teach geography in general. However, teacher educators believe that the majority of primary school teachers are insufficiently competent to organise more complex geography, criticising the apparent absence of differentiated instruction in geography. This finding is in line with pupils' perceptions that current geography lessons scarcely contain stimulating activities and too often are characterised as reading skill exercise lessons (Bent et al., 2014). It seems that despite the ongoing professional development of teacher behaviour and technological development within primary education practice, primary school teachers seem to have difficulty organising more complex geography education.

Both teacher educators and primary school teachers believe that assessing learning outcomes is of limited importance. Teacher educators explain their doubts by criticise the current assessment practice. Teacher educators believe that assessments are of added value

when these assessments are of sufficient quality and the results are used to increase the quality of geography education.

Both teacher educators and primary school teachers believe that current colleague support is of limited added value. Teacher educators explain their reservations by suggesting that the added value of colleague support needs to be found beyond exchanging daily experiences. Examples could be charring teaching projects between different teachers across different classes. This finding confirms results of other studies (e.g. Cordingley, Bell, Isham, Evans, & Firth, 2007). Little (2002) found that high interdependence (i.e. joint working) leads to more collaborative teacher learning than low interdependence (i.e. exchanging info).

Teacher educators' beliefs about geography aspects are more strongly interrelated, as compared to those of primary school teachers. An explanation for this finding can be that teacher educators as professionals have more knowledge about the interrelationship between geography education aspects because of their higher level of expertise compared to primary school teachers; a suggestion which is underlined by the findings in the qualitative part of this study (Berliner, 1994). For example, a strong relationship has been found between teacher educators' beliefs concerning the importance of assessments and curriculum emphasis on geography. Teacher educators clarified this relationship by suggesting that assessing pupils' learning outcomes for use of external accountability of geography education quality probably results in more attention among teachers for teaching this subject and for achieving increased learning outcomes.

Regarding methodology, it can be concluded from this study that adding qualitative research to quantitative research results in better understanding of beliefs about primary geography. Investigating teacher educators' beliefs and primary school teachers' beliefs by closed question surveys and afterwards by semi structured interviews clarified their beliefs in more depth. By combining the results of these two methodologies, it became clear that teacher educators believed primary school teachers' beliefs about geography education aspects inhibits their ability to organise high quality geography education.

Limitations and Future Research

This research had some limitations. Firstly, it should be noted that 64% of the teacher educators' have no experience as primary school teachers. In addition to this, it has been found that teacher educators visit primary schools on average ten times a year, observing six geography classes by primary pre-service teachers and two geography lessons/classes by primary teachers yearly.

This absence of experience and observations may influence teacher educators' beliefs about primary geography education quality and beliefs about the aspects selected for this study.

Secondly, primary school teachers and teacher educators' beliefs of geography education aspects have been investigated by using a questionnaire with a relatively small number of items. It might be preferable in forthcoming studies to expand the number of items, because some scales have been constructed with a relatively limited number of items.

Lastly, because of the use of two similarly structured, but independent questionnaires, a direct link between both sets of quantitative results could not be made. The differences between the results for the teacher educators and the primary teachers could have been influenced by the facts that the sizes of the two groups were very different (43 and 489, respectively). This was due to the limited number of teacher educators as compared to primary school teachers.

Practical Implications

The results of this study suggest that teacher educators' more theoretical and primary school teachers' more practical views regarding preferred ways of approaching geography education could yield important insights into improving the quality of primary geography education. It can be expected that theoretical views will be improved by taking into account practical views and experiences, and vice versa. These improvements can focus on more cooperation between teacher educators and primary school teachers in several areas. For example, teacher educators could support primary school teachers in how to teach more complex geography lessons that include higher order skills and more active roles by students. In doing so, teacher educators might function as role models for primary pre-service teachers. As an added value, teacher educators would gain more experience in teaching primary geography. By intensifying teacher training and primary school practice, primary schools might function more effectively as practical primary teacher training institutes. This may raise the quality of teaching this subject given that teachers are responsible for teaching a wide range of subjects.

An issue to address is the doubt of teacher educators regarding the suitability of primary schools as a daily practical training institute for future teachers in case of geography education as complementary to the University of applied Science training institute (Blankman et al. 2015). Conversely, a possible doubt of primary school teachers regarding the lack of primary education experience of teacher educators in teaching geography in primary schools also has to be addressed. The proposed collaboration would most likely function to increase mutual understanding between teacher educators and primary school teachers about current and preferable geography lessons within primary schools. Therefore it can be expected that intensifying cooperation results in eliminating the mutually contradicting beliefs about current and preferable geography lessons between teacher educators and primary school teachers. Recent findings concerning the added value of comparing teacher educators', primary school teachers' and primary pre-service teachers' knowledge and experiences with the aim of improving (student) teaching (Liu, 2012) underline this suggestion.

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