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## IN SEARCH OF EMPIRICAL EVIDENCE FOR A GROWTH PATH TO CRITICAL REFLECTION

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### Abstract

During their studies, pre-service teachers are continually asked to reflect. Hereby is mainly expected that they reach a level of critical reflection. Critical reflection is often described as a growth path in different phases, with critical reflection as endpoint. It is unclear whether empirical research confirms this growth path. To check whether a growth path with critical reflection as endpoint can be empirical confirmed, 596 reflections from four different empirical studies with pre-service teachers were taken in a secondary analysis. The results from this secondary analysis reveal that 1) participants score very low on critical reflection and 2) the idea of a growth path with critical reflection as endpoint, can not be confirmed. Focus shift is possibly a description that is closer to the empirical findings. Based on the results of this study, possible implications for the supervision of students are described.

### Introduction

During their studies, pre-service teachers are continually asked to reflect (Calderhead & Gates, 1993; Korthagen & Vasalos, 2005). Although teachers-in-training are often asked to reflect, is there nevertheless still confusion about the concept of reflection (Henderson, Napan & Monteiro, 2004; Kinsella, 2007).

An important contribution in this debate is provided by Kelchtermans (2001). Kelchtermans (2001) distinguishes in-depth and in-breadth reflection. In-breadth reflection comprises the emotional, technical, moral and political dimensions. In-depth reflection refers to a personal interpretative framework and includes two domains: professional self-understanding and subjective educational theory.

According to Kelchtermans (2001, 2009), a reflection may be considered as a critical one when it includes moral and political agendas in the work context, and goes beyond the level of action to the level of underlying beliefs, ideas, knowledge and goals (personal interpretative framework). Without this deep and critical character, reflection may become nothing more than a procedure; "a method or coping strategy that confirms and continues the status quo" (Kelchtermans, 2009, p.269). In this paper we use the theoretical model of Kelchtermans to describe reflection.

Table 2: Theoretical model reflection\*Critical reflection

<b>Reflection</b>					
<b>In-breadth reflection</b>				<b>In-depth reflection Personal interpretative framework</b>	
Emotional dimension	Technical dimension	Moral dimension	Political dimension	Domain subjective educational theory	Domain professional self- understanding
					Components - self-image - self-esteem - job motivation - future perspective - task perception
		Critical reflection			

Several theoretical models suggest that the notion of critical reflection assumes a growth path with different phases whereby the level critical reflection is an endpoint (e.g. Lee, 2005; van Manen, 1977).

In this study we investigate whether a grow path with different phases to the level of critical reflection can be confirmed through empirical research with pre-service teachers.

## **Design of the study**

### ***Participants***

In total, 464 pre-service teachers participated in the different studies. 180 followed a pre-school, 183 primary school and 101 secondary school teacher training. 44 participants were in the third year of their training (see 1st study), 420 in the first year (see 2nd, 3rd and 4th study). In the first and third study, participants are pre-school and primary student-teachers. In the third study participants are secondary school student-teachers, and in the fourth study participants are primary school student-teachers (see Table 2).

Table 2: Overview participants

Teacher training	Year of training	Participants
Pre-school	First	153
	Third	27
	Total	180
Primary school	First	166
	Third	17
	Total	183
Secondary school	First	101
	Total	101
		464

## Methodology

A total of four studies were included in a secondary research. The choice for just these (and only these) four studies are related to the fact that in each study:

1. participants are pre-service teachers,
2. the theoretical model of Kelchtermans was used to describe the notion of reflection, and
3. the same method was used to determine the extent to which reflections reach a critical level.

In the first study, a field experiment with a within subjects design was used; in the second an online experiment with a pre-test post-tests control group design; in the third and fourth study respectively an experiment with a pre-test post-tests and a post-tests only control group design (Callens, 2012).

Like other approaches to measure the degree of critical reflection (Granberg, 2010; Carrington & Selva, 2010), in the four studies a framework was used. In each study this framework consisted of descriptions of different categories that are used to analyze the reflections (Callens, 2012). The categories used in the four studies were referring respectively to inbreadth-reflection and in-depth reflection, see theoretical model of Kelchtermans. As one element in a reflection of a participant refers to a category/indicator, an assessor gives the score one; when two elements refer to a category/indicator the score 2, and so on.

## Results

The mean score on critical reflection is very low and a high SD is found (mean = 0.47, SD = 1.00). A one-way ANOVA with training year as independent variable and the degree of critical reflection as dependent variable, reveals a weak to moderate main effect ( $F(1,594) = 23.28$ ,  $p = 0.00$ ,  $\eta^2 = 0.03$ ). Third year students score higher on critical reflection (mean = 0.77, SD = 1.39) than freshmen (mean = 0.34, SD = 0.75). A descriptive analysis reveals that:

1. starting students pay special attention to technical aspects of teaching;

2. third years focus less on technical aspects but more on: structural and organizational context of a school (cf. political dimension), an emotional dimension and components of professional self-understanding;
3. first year students score almost as high as third years on the domain educational subjective educational theory; and
4. the moral dimension scores extremely low in all studies.

Table 3: Overview scores dimensions /domains reflection

Reflection							
In-breadth reflection						In-depth reflection Personal interpretative framework	
		sum emotional dimension	sum technical dimension	sum moral dimension	sum political dimension	sum subjective educational theory	sum domain professional self- understanding
First study	Third year students	220	16	2	29	41	63
Second study	First year students	23	73	0	4	58	4
Third study	First year students	23	61	0	0	33	1
Fourth study	First year students	28	46	3	3	24	11
	<b>Total</b>	<b>294</b>	<b>196</b>	<b>5</b>	<b>36</b>	<b>156</b>	<b>79</b>
Critical reflection							

Table 4: Score dimensions/domains reflection

Participants	Dimensions/domains	Mean score	SD	N
First years	emotional dimension	.18	.62	420
	technical dimension	.43	.84	420
	moral dimension	.01	.10	420
	political dimension	.02	.17	420
	subjective educational theory	.27	.69	420
	prof. self understanding	.04	.20	420
Third years	emotional dimension	1.25	1.12	176
	technical dimension	.09	.40	176
	moral dimension	.01	.10	176
	political dimension	.16	.63	176
	subjective educational theory	.23	.73	176
	prof. self understanding	.36	.80	176

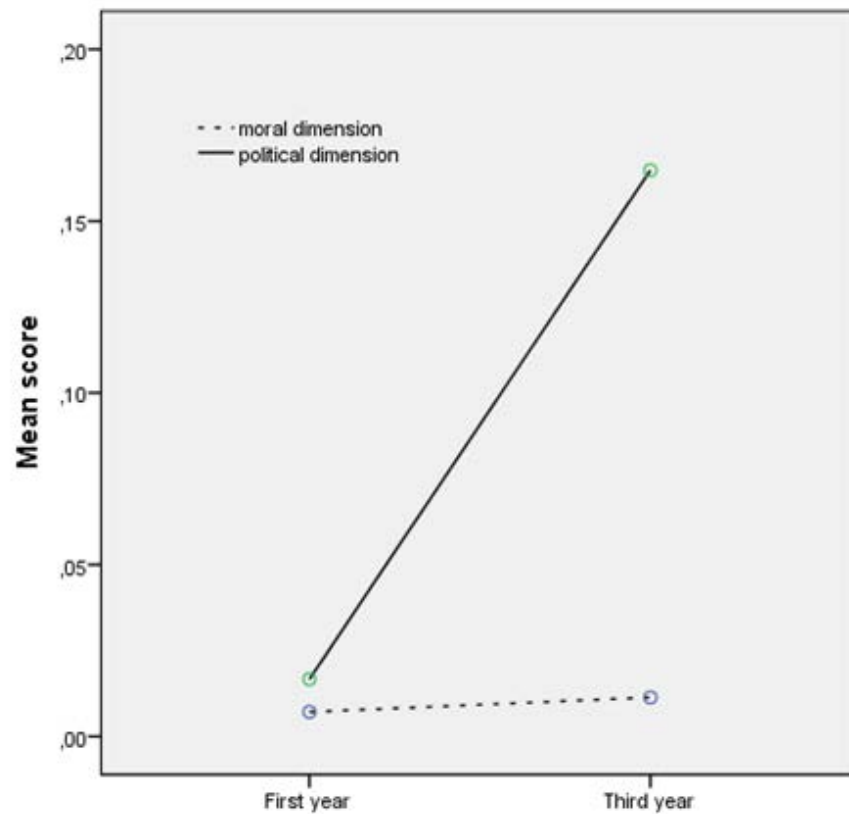


Figure 5. Profile plot\*Politica land moral dimensions

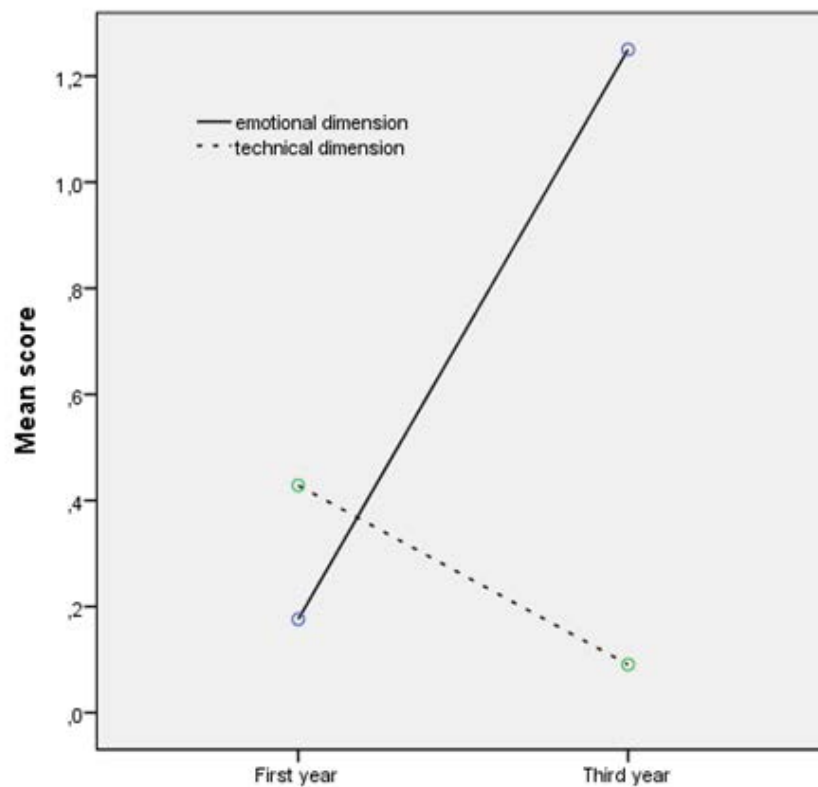


Figure 2. Profile plot\*Technical and emotional dimensions

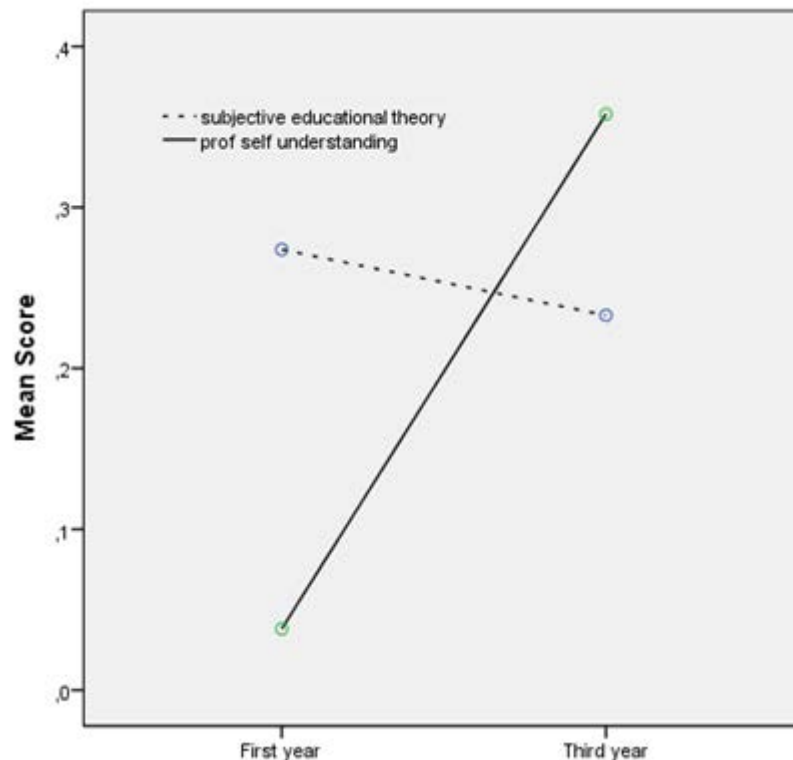


Figure 3. Profile plot\*Domain subj educational theory and prof self understanding

## Conclusions

Based on the results of this research, the idea of a growth path with different phases and with as endpoint the level of critical reflection, cannot be confirmed. Focus shift (with a varying attention of the students to certain aspects of a reflection process) is possibly a description that is closer to the empirical findings obtained with this conducted secondary analysis.

Implications of this study for an educational practice? Firstly, the focus shift in the reflections of pre-service teachers, may have impact on the guidance of a reflection process. When we take the perspective of the learner as starting point to determine the items where pre-service teachers could reflect on, it seems that the technical dimension and the domain subjective educational theory can stand at the heart of a start-up phase. If the student is more advanced in his/her teacher training, the emphasis may be on the domain professional self-understanding, the emotional and political dimension and finally on the moral dimension.

To conclude, following Carrington and Selva (2010), it seems interesting in future studies to determine whether the explicit incorporation of the emphasis on certain dimensions / domains actually helps students in their development to the level of critical reflection.

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