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Highlights

- Teacher candidates should have opportunities to enact practices in campus courses
- Teacher education programmes differ in how much opportunities they offer
- Practices closely linked to pupils' understanding are enacted the least

Abstract

The aim of this article is to explore similarities and differences in teacher candidates' perceptions of their opportunities to enact practice in university courses in five teacher education programs, located in Norway, Finland, USA, Cuba, and Chile. Paper and pencil surveys were distributed among candidates (N=488) to measure their perception of their opportunities to enact practice in campus courses. Across programs the students report the least opportunity to examine transcripts of classroom talk or student discussions. They report the most opportunity to talk about their field placement and to plan for their teaching. Using Analysis of Variance, differences between the programs were studied. Students in a program which has explicitly made efforts to connect theory and practice over a period of 15 years do report more opportunities to enact practice. Students from a program that has been constantly working on improvements but not a major redesign conceptualized around coherence, report experiencing fewer opportunities to enact practice. We conclude that teaching practices closely linked to pupils' understanding might be in need of additional attention in teacher education programs.

Keywords

Teacher education, enactment of practice, student perspective, teacher candidates

Opportunities to enact practice in campus courses: Taking a student perspective

Actors within and around teacher education agree that a strong connection with practice within teacher education programmes is important (Forzani, 2014; Vidergor, Magen-Nagar, & Ilajyan, 2017). Teacher candidates, hereafter ‘candidates’, particularly evaluate the practical components in their programmes as positive and important (Tang, Wong, & Cheng, 2016; Vidergor et al., 2017). Yet, teacher educators provide too few opportunities to translate principles of good teaching presented into specific classroom practices (Jenset, Klette, & Hammerness, 2018). Campus courses should include opportunities for candidates to try out and rehearse actual classroom practices (e.g., Jenset, Canrinus, Hammerness, & Klette, 2018; Windshittl & Stroupe, 2017). Here, we investigate the extent to which candidates experience to have these opportunities. We collected data from five teacher education programmes in five countries to answer the following research questions:

- (1) What are the similarities and differences across programmes in candidates’ perceptions of their opportunities to enact practice in their campus courses?
- (2) What kind of practices seems to be focused upon on campus?

The enactment of practice

Fieldwork is important in teacher education, offering candidates experiences in actual classrooms and schools. Yet, learning about ambitious and complex teaching practices should not be carried out solely at school sites (Canrinus, Bergem, Klette, & Hammerness, 2017; Darling-Hammond, 2014) as this could maintain the historical unfortunate division between theory and practice (Darling-Hammond, 2014; Zeichner, 2010). American research has shown that candidates, compared to students in law, medicine, and clergy, have the least opportunity

to practice their future activities in campus coursework (Grossman, Compton, Ingra, Ronfeldt, Shahan & Williamson, 2009). This is concerning as the extent to which candidates could rehearse activities close to actual classroom practices during their teacher education was related to their pupils' achievement on standardized tests later on (Boyd, Grossman, Lankford, Loeb & Wyckoff, 2009).

Hammerness (2012; 2013) examined the presence of opportunities to learn about actual classroom practices in Norwegian teacher education programmes. Many teacher educators expressed that they perceived school as the main arena for affording such practises. They also contended that in campus courses, relatively little time was used to analyse pupils' work or other artefacts used in classrooms. A recent study presenting findings from observations of methods courses in a Finnish, a Norwegian and an American teacher education programme (Jenset, Canrinus et al., 2018) supports these statements. Hammerness (2013) underlines that many Norwegian teacher educators and programme directors draw a clear distinction between the mainly theoretical university courses and the practical work taking place at the schools.

Many ways have been proposed to strengthen the link between campus courses and the actual teaching of teachers. Jenset, Hammerness, et al. (2018) give an overview of practices candidates should, according to the literature, be able to rehearse during their campus courses, e.g., organizing a whole class discussion and planning for teaching. These practices show great overlap with the 'core practices' or 'high leverage practices' to which teacher educators and scholars have turned (e.g., McLeskey, Billingsley, & Ziegler, 2018; McNew-Birren & van den Kieboom, 2017). Grossman, Hammerness, and McDonald (2009) argue that these practices allows novices to develop a deeper understanding of the complexity of teaching and student learning and improves their preparation for their future professional

duties. Yet, little is known about whether candidates actually are provided with these opportunities (Cochran-Smith, Villegas, Abrams, Chávez-Moreno, Mills, & Stern, 2016).

Enacting practices enables candidates to practice specific behaviours and contributes to their understanding of coherence throughout the teacher education programme. Candidates particularly perceive little coherence between campus courses and fieldwork (Canrinus, Bergem, et al., 2017). Enacting practices on campus may help to bridge this gap (Wæge & Haugaløkken, 2013). A clear understanding of the linkages within their educational programme is fundamental for candidates, enabling them to make sense of new and complex ideas and demands (cf. Clarà, 2015). Therefore, it is also important for teacher educators to know whether candidates actually perceive to have opportunities to enact practices at campus.

Candidates' perceptions

Although researchers report that campus courses and fieldwork have an impact on candidates, this impact is often different from the impact teacher educators envisioned (Clift & Brady, 2005). Although teacher educators may believe they have incorporated opportunities to enact practice in their educational programme, the question remains whether candidates also perceive these opportunities as such.

Pupils' perceptions of their teacher have already been incorporated in research designs investigating secondary school teachers' behaviours (e.g., Bakx, Koopman, de Kruijf, & den Brok, 2015; Maulana, Helms-Lorenz, & Van de Grift, 2015). Pupils' perceptions are based on their experiences with their teacher throughout the year, which external observers' perceptions often are not (Maulana et al., 2015). These perceptions are more predictive of pupils' achievements than external evaluations of the teacher (e.g., Seidel & Shavelson, 2007). In higher education, student evaluations have become more common. Findings show that students' perception of their educational programme affects their academic results and

how they approach their learning experience (e.g., Prosser, Ramsden, Trigwell, & Martin, 2003).

Researchers have underlined the importance of including candidates' perceptions in evaluating the quality of teacher education programmes (e.g., Darling-Hammond, 2006a; Raudenbush, 2008). Candidates have recently experienced the actual programme and are a reliable source of information when it comes to self-report data (Raudenbush, 2008; Rowan & Miller, 2007). Several studies have included candidates' perception of coherence in their teacher education programme (e.g., Canrinus, Klette, et al. 2017; Grossman, Hammerness, McDonald, & Ronfeldt, 2008), yet, studies including candidates' perceptions of their opportunities to enact practice in campus courses are limited (see Jensen, Hammerness, and Klette [2018] and Jensen, Klette, et al., [2018] for an exception).

Candidates are a valuable and necessary source for teacher educators and researchers to understand the extent to which actual teaching practices are enacted in teacher education campus courses. We contribute to the understanding of the enactment of practice through the candidates' eyes, adding an important perspective to the existing knowledge base.

Method

We draw on data from the Coherence and Assignments in Teacher Education (CATE) study, an international study of teacher education programmes. Designed as a multiple case study (Eisenhardt & Græbner, 2007), it investigates the vision, coherence, and opportunity to enact practice within university-based education programmes across different settings using qualitative and quantitative data collected from teacher educators, teacher candidates, and programme directors (for more information see: Hammerness & Klette [2015]; Hammerness, Klette, Jensen, & Canrinus [submitted]). Here, we present findings from the survey data on candidates' perceptions of their opportunity to enact practice.

CATE included two teacher education programs in Norway, Finland, and the US (California). These locations were selected as they had gone through various processes of reform. Stanford, California, for example, underwent systematic program design in the past 15 years focusing on articulating a clear vision and establishing a stronger linkage between theory and practice (Hammerness, 2006). Finland emphasised teacher education on a Master's level, resulting in a skilled body of teachers (Niemi & Jakku-Sihvonen, 2006; Sahlberg, 2011). Norway was reforming their teacher education and putting nationwide substantial effort and resources into the improvement of teacher quality and -education (Munthe & Rogne, 2016).

The programs were considered to be selective, and strong and effective (Levine, 2006; Darling-Hammond, 2006b). Due to small sample sizes and unreliable data (e.g., reversed items were not reverse rated), only three of the original programs were included in the present paper. To broaden the international comparative opportunities, we obtained separate funding to include one program from Santiago, Chile, and from Havana, Cuba. These programs are also considered as good teacher education programs within their respective countries.

Programme Descriptions

Collecting data from five university-based teacher education programmes widens our exploration and strengthens the grounding of our findings in a diversity of empirical evidence (Eisenhardt & Graebner, 2007; Stake, 2006). We included the following programmes:

- University of Oslo in Norway,
- Stanford Teacher Education Program in the US,
- University of Helsinki in Finland,
- Pontificia Universidad Católica de Chile (PUC) in Santiago, Chile

- Universidad de Ciencias Pedagógicas “Enrique José Varona” (Varona) in Havana, Cuba.

Program

All programmes are university-based teacher education programmes focused on educating teachers for grade levels 8-13 (pupils’ age 12-18; see Table 1). The composition and structure of the programmes is very similar (i.e., starting with theories of learning and instruction, and ending with theories of assessment). The ratio between methods courses and foundational courses, the themes covered, and the assigned readings are very similar, although Helsinki has a stronger focus on research and research methods (Afdal & Nerland, 2014). Except for Varona, all programmes are post-bachelor programmes¹, and whereas three of the programmes are 1-year programmes, Varona is a 5-year programme and Helsinki combines a 5-year and a 1-year programme. To ensure comparability across contexts, we collected our data in Varona and Helsinki during the years where the students would have the longest field placement.

Practice

The programmes differ in the structuring and organization of the candidates’ fieldwork. Oslo and Helsinki candidates have three to four blocks of fieldwork during which they are in the school the whole period. They organize the fieldwork with collaborating schools, some of which being university schools (Oslo) or lab school (Helsinki). These programs do not select the mentors within the schools. PUC candidates have two blocks of fieldwork during which candidates work concurrently in the school and on campus. PUC does not pay the mentors in the schools and selection of these teachers is not possible. Elsewhere, we discussed the gap between campus and internship at PUC (Canrinus, Bergem et al., 2017). Students in Stanford and Varona have concurrent fieldwork, alternating between campus and their fieldwork

during the same day or week. Stanford selects collaborating schools and mentors within schools based on these mentors' experience and teaching quality. At Varona, the supervision of the candidate during fieldwork is a shared responsibility between the school and campus.

Reform

All programmes have pursued reform. The Stanford reform started in 1999 and the major changes, focusing on enhancing programme coherence by agreeing upon a well-articulated vision of good teaching practice, were completed in 2002 (Hammerness, 2006). Oslo, PUC, and Varona all have initiated large-scale reform efforts within the last decade (Canrinus, Bergem, et al., 2017; Hammerness et al., submitted). These efforts included redesigning their programmes, deepening their pedagogies of practice, and strengthening the connection to partner schools, ensuring a stronger and closer connection to actual teaching practices (e.g., Engelién, Eriksen, & Jakhelln, 2015; see also Hammerness et al., submitted, for a more extensive description of the reforms). Helsinki (and Finland nationally) has long emphasised the importance of a skilled teaching force, reflected in the requirement of a Master's degree in all subject areas and grade levels, resulting in a major restructuring of teacher education in the 70's. Faculty report ongoing adjustments of the teacher education programme, but recent major reforms were not implemented at the time of our data collection (c.f. Niemi & Jakku-Sihvonen, 2006).

<<<Table1>>>

Participants

The Norwegian Centre for Research Data (NSD) gave us permission to conduct our study. NSD protects the privacy and rights of potential research participants. In total, 488 candidates voluntarily participated (see Table 1). Anonymity was ensured as we only asked for gender

and major subject taught as background variables. Candidates could leave blank any question they did not want to answer. Research assistants distributed and collected the paper and pencil surveys at courses all candidates were supposed to attend. We obtained mainly high response rates, ranging from 100% (Stanford & Varona) to 76.25% (Oslo, see Table 1), except in Helsinki (18.54%), due to the absence of obligatory classes and due to the flexibility of the student schedules. Many lectures in Helsinki are optional and candidates can decide to take specific courses in either their third or fourth year. Nearly all students present in the class in Helsinki completed the survey and the sample is considered representative, as the respondents' age and subject were similar to the population. Across programmes, the gender distribution (33% males) resembles the average gender distribution in the teaching population of OECD countries (OECD, 2013).

Instruments

We build on the instrument used in the New York City Pathway Study (Boyd, Grossman, Lankford, Loeb, Michelli, & Wyckoff, 2006), which explored the characteristics of different teacher education programmes. Candidates were asked to indicate on a four-point scale (1=none – 4=extensive opportunity) the extent to which they had the opportunity to do what was described in the respective items (e.g., plan for teaching; examine actual teaching materials).

Our survey included 11 items. After removing the items 'experience your teacher educator modelling/demonstrating effective teaching practices' and 'solve problems, read texts, or do actual work that your own pupils will do', the remaining 9 items showed good internal consistency across the programmes ($\alpha = .81$). The internal consistency within the programmes was acceptable to good (range $\alpha = .66-.85$, see Table 2).

<<<Table 2>>>

Analyses

We used analysis of variance (ANOVA) at the scale level and Multivariate ANOVA at the item level to answer our research questions. Due to unequally distributed variances, we used the Welch F-test to compare the programmes and Games-Howell as post-hoc test.

Results

How the programmes differ

Stanford stands out as the programme in which the candidates experienced the most opportunity to enact practice in their campus courses, followed by the Oslo candidates (see Table 2). Candidates in Varona and Helsinki reported to have the least opportunity. There were significant differences between the programmes (Welch $F[4,483] = 31.90, p < .01$) with Stanford candidates reporting significantly more opportunities than all other candidates. Differences between the candidates ranged from mean difference (M) = .80 (SD = .07, $p < .01$) with the Helsinki students to M = .39 (SD = .06, $p < .01$) with the Oslo students.

Oslo candidates experienced significantly more opportunities to enact practice compared to Helsinki candidates (M) = .41 (SD = .06, $p < .01$) and Varona candidates (M) = .40 (SD = .07, $p < .01$). PUC candidates' ratings were significantly higher than those from the Helsinki candidates, but only at the .05 level (M = .27, SD = .09, $p = .04$). Summarizing, Stanford candidates report more opportunities than the other four programmes, Oslo candidates report more opportunities than Varona and Helsinki candidates, and PUC candidates report more opportunities than Helsinki candidates.

Similarities and focal practices

Taking a closer look at the items comprising our scale, item 1G: ‘Examine transcripts of real K-12 classroom talk or student discussions’ was rated, on average, lowest by all candidates, with a mean of 2.08 (SD = .97; see Table 3). Second scored the item 1D: ‘Examine samples of your own students’ work’. Across programmes candidates perceived to have touched briefly on this practice (M=2.28, SD = 1.07). Yet, item 1I: ‘Discuss experiences from your student teaching (fieldwork) in your university classes’, closely followed by 1A: ‘Plan for teaching’, are activities the candidates reported, on average, to have the opportunity to enact most frequently, with an average of 3.27 (SD = .76) and 3.09 (SD = .92) respectively.

<<<Table 3>>>

The programmes did not significantly differ regarding item 1B: ‘Practice or rehearse something you planned to do in your K-12 classroom in this course’ and 1I: ‘Discuss experiences from your student teaching (fieldwork) in your university classes’ (both $p > .05$). Thus, candidates consistently reported a similar amount of opportunity to enact these practices in their campus courses. Stanford candidates reported significantly more opportunity to enact the following practices compared to all other candidates ($p < .01$ in all cases): 1A: ‘Plan for teaching’, 1D: ‘Examine samples of your own students’ work’, 1E: ‘Examine actual teaching materials’ and 1G: ‘Examine transcripts of real K-12 classroom talk or student discussions’.

Candidates in the Helsinki and the Varona programme reported significantly less opportunity to examine samples of K-12 student work (1C) and less opportunity to examine actual teaching materials (1E) compared to candidates in the Stanford, Oslo, or PUC programme. Additionally, Helsinki candidates rated the item 1H: ‘Watch or analyse videos of classroom teaching’ significantly lower than all other candidates ($p < .01$).

Thus, discussing experiences from their fieldwork is the one thing candidates in all programmes perceived to do the most extensively, followed by the opportunity to practice or rehearse something the students planned to do in their K-12 classroom. Across programmes, candidates generally reported few opportunities to examine transcripts of real K-12 classroom talk or student discussions. Additionally, all programmes have their idiosyncratic opportunities to improve the extent to which candidates perceive to have the opportunity to enact practice within their campus courses.

Discussion

We aimed to explore similarities and differences across programmes in candidates' perceptions of their opportunities to enact practice in their campus courses, and to find out which practices are focused upon. Starting with the former, we observed clear differences between programmes. Candidates from Stanford reported significantly more opportunities to enact practice compared to all the other students, possibly because of the reform process Stanford has been through. Faculty started working on creating a coherent programme in 1999 and have since then been in a continuous process of development. The programme has been in a more distinct and long-lasting process of reform than the other programmes. One focus of reform has been to strengthen the linkage between the campus courses and the field placement sites to provide candidates with opportunities to try out and enact teaching (Hammerness, 2006). In a related study, candidates in this programme also perceived their programme to be very coherent and even more so than candidates from other programmes (Canrinus, Bergem et al., 2017; Canrinus, Klette, et al., 2017). Here, the implemented reform not only affected the teacher educators, it also appears to have affected the candidates' experiences, which not always occurs (Clift & Brady, 2005).

Oslo, PUC and Varona were still in their reform process when we collected data. Oslo was in the reform process the longest, aiming, like Stanford, to strengthen their connection to

actual teaching practices (Engelien, et al, 2015). With Oslo candidates expressing the second most opportunities to enact practice, this might suggest that length of reform contributes to candidates' experiences regarding their opportunity to enact practices. Indeed, change takes time. It is hard, if not impossible, to set a timeframe on implementing change, as it depends on features of the change agents and all actors should be included in the process (cf. Porter, 2005).

Both Oslo and PUC were embedded in a nationwide reform (see Hammerness et al., submitted). The one in Norway being the most recent and focusing the most on the linkage between practice and theory. Possibly, the national embeddedness contributed to the implementation of the aimed reform and clarifies the relevance of the envisioned change for those involved. This might also explain why the findings of Oslo and PUC are fairly similar. Still, these candidates did not express to have extensive amount of opportunities to enact practice, suggesting that the intended and the enacted curriculum (Porter, 2005) might still be two different worlds.

The reform in Helsinki was also embedded in a nationwide reform, but this reform was implemented in the 70's, focusing on candidates obtaining a Master's degree. Helsinki candidates reported significantly fewer opportunities to enact practice compared to students from three of the other programmes, possibly due to a different focus of the programme. Helsinki emphasizes research and research methods and appears to focus more on theory than on the practical aspects of teaching (Hansén, Eklund, & Sjöberg, 2015). Finnish teachers are professionally very autonomous (Sahlberg, 2010) and Finnish education emphasizes the autonomous individual as reflected in the high program flexibility offered to the candidates. The focus on theory ensures that candidates obtain the knowledge to autonomously choose the right practice in any specific situation. Instead of offering opportunities to enact teaching, the programme focuses on academic knowledge and skills candidates should acquire to be able to

teach and handle their classrooms. Still, candidates experience relatively little coherence between their campus and field placement (Canrinus, Bergem et al., 2017; Canrinus, Klette et al., 2017). Francis, Olson, Weinberg, and Stearns-Pfeiffer (2018) showed that integration of practice throughout campus courses can positively influence candidates' perceptions of program coherence.

Both Helsinki and Varona are 5-year programmes, giving them more time to connect theory and practice, yet, these candidates report to have the least opportunity to enact practice. Grossmann et al. (2008) concluded that the quantity of coursework connected to practice is not the main key in connecting campus and fieldwork. They stress that “the extent to which those assignments that link coursework and fieldwork are thoughtful, purposeful, and well constructed” is most important (p. 283). Recent research by Hennissen Beckers and Moerkerke (2017) support this statement, showing the importance of, for instance, considering candidates' cognitive load when designing such assignments.

Prioritizing opportunities to enact practice

Candidates perceived to have the most opportunities to plan for teaching and to discuss fieldwork experiences, even though the programmes balance campus and fieldwork differently. At Stanford and Varona, fieldwork is done continuously throughout the semesters, while in Helsinki and Oslo it is scheduled in blocks in which candidates spend all their time in the schools. Jensen, Hammerness, et al. (2018) support our findings as they observed similarities between Norwegian, Finnish, and Californian programmes in the amount of time offered to candidates to talk about their field placement. However, their analysis indicates that the quality of the conversations about this theme varied, suggesting that it is important to investigate the quality of the offered opportunities in teacher education programmes, in addition to students' perceptions of them.

Both planning for teaching and discussing fieldwork are activities quite distant from pupils. Practices closer to the pupils, e.g., examining transcripts of real classroom talk or student discussions and examining samples of one's own pupils, were rated lowest. The candidates perceived to have few opportunities to enact these practices on campus. Experiencing few opportunities to examine own pupils' work might be explained by the fact that only students in the Stanford and Varona programme had concurrent field placement and a responsibility for their 'own' pupils. The candidates' perception of few opportunities to examine transcripts aligns with the findings by Jensen, Canrinus et al. (2018), who observed that candidates were offered few opportunities to analyse pupils' learning.

Scholars underline that practices considered being close to pupils' learning are key elements in classroom teaching (Hammerness & Klette, 2015; Jensen, Canrinus et al., 2018). Yet, LaRochelle (2018) concluded that, similar to candidates, experienced teachers in mathematics also have difficulties with responding to and interpreting pupils' reasoning. Teacher education programmes might consider how they want to position such practices on campus and shift their focus even more from learning about teaching to learning about supporting and understanding pupils' learning (cf., Jensen, Canrinus, et al., 2018). Mathematics teacher educators already attempt to teach candidates how to elicit and interpret pupils' reasoning (e.g., Lesseig, Casey, Monson, Krupa, & Huey, 2016), but this is an issue relevant for all subjects (Jensen, Canrinus, et al., 2018b). Learning on campus about dealing with the diversity and evolution of pupils' misconceptions will give candidates a platform for handling such challenges later in their professional career. Including examining own pupils' work or examining transcripts from real K-12 classroom talk or student discussions more in campus courses might help to attain such a goal (cf. Wæge & Haugaløkken, 2013).

Limitations and further research

When exploring a construct, including multiple cases is important (Eisenhardt & Graebner,

2007; Stake, 2006). Having used data from five teacher education programmes, we believe we have gained a wider understanding of the concept of enactment of teaching and have stronger grounds for our findings than if we only would have studied a single programme. Our findings are, nevertheless, based on a limited sample of programmes. Readers should bear in mind that we have investigated individual programmes within each country and our findings are not generalizable to the country level. Programmes in the US, for example, are characterized by great diversity (Zeichner, 2016). Yet, we believe we have painted a picture of how candidates may experience their opportunities to prepare themselves on campus for the practical side of their profession.

Further research should aim to incorporate more programmes to investigate the robustness, generalizability, and stability of our findings. Multiple settings per country would offer possibilities to investigate country and/or policy specific influences and expanding samples to incorporate African or Asian programmes would broaden our understanding of how opportunities to enact practice are present across the globe. First steps in this direction have already been made (e.g., Goh & Canrinus, 2018), but more are needed.

Furthermore, we based the construction of our survey on an existing instrument tapping into characteristics of different teacher education programmes (Boyd et al., 2006) and included practices which scholars have stressed to be key aspects of quality teaching (e.g., Kazemi, Ghouseini, Cunard, & Turrou, 2016). However, additional practices could be important in different contexts. As mentioned, the Helsinki programme focuses on research, theory, and teacher autonomy (Afdal & Nerland, 2014; Hansén et al., 2015). These concepts might be considered key practices in this specific context and further research might include these.

Conclusion

Offering, in addition to fieldwork, opportunities to enact teaching practices during campus

courses is important (e.g., Kazemi et al., 2016). We have shown the extent to which candidates perceive they have had these opportunities. Although differences across contexts exist, we observed that practices close to pupils' learning processes seem to be given less attention in campus courses. Grossman, Hammerness, et al. (2009) recommended prioritizing core practices labelled "learning about student understanding" which involves "eliciting student thinking during interactive teaching" and "anticipating student responses" (p. 280). Based on our findings, we believe that an increased focus on enactment of teaching practices linked to pupils' understanding is an issue in need of additional attention in teacher education programmes.

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Footnote

1. Oslo students are also allowed to enter the programme if they obtained 180 credits with 60 credits in their subject (1 credit equals 25-30 hours of studying) which is similar to the minimum credits necessary to obtain a bachelor's degree.

	Oslo	Stanford	Helsinki	PUC	Varona
Location	University based	University based	University based	University based	University based
Goal pupils	grade 8-13	grade 8-13	grade 8-13	grade 8-13	grade 8-13
Programme length	1 year	1 year	5 years & 1 year	1 year	5 year
Qualifies for a Master degree	No	Yes	Yes	Yes	Only the best, pre-selected students get a master degree
Structure of fieldwork	In blocks	Concurrent	In blocks	In blocks	Concurrent
Participation in present study	122	72	75	78	140
% male	42	35	32	31	26

Table 1. Background information per programme

	# Respondents	Internal consistency (Cronbach's α)	Opportunities to enact practice (Mean [SD])
Oslo	122	.66	2.79 (.42)
Stanford	72	.72	3.18 (.42)
Helsinki	76	.71	2.38 (.45)
PUC	78	.85	2.64 (.67)
Varona	140	.83	2.39 (.65)
Total	488	.81	2.64 (.61)

Table 2. Mean scores and internal consistency per programme

	Oslo	Stanford	Helsinki	PUC	Varona	Total
1A Plan for teaching	3.25 (.70)	3.82 (.42)	2.91 (.79)	3.14 (.96)	2.59 (1.06)	3.09 (.92)
1B Practice or rehearse something you planned to do in your K-12 classroom in this course	2.70 (.84)	2.83 (.72)	2.63 (.80)	2.53 (1.07)	2.69 (.99)	2.68 (.90)
1C Examine samples of K-12 student work	2.93 (.75)	2.85 (.82)	2.11 (.92)	2.62 (.97)	2.06 (1.01)	2.51 (.97)
1D Examine samples of your own students' work	2.27 (1.03)	2.82 (.86)	1.97 (.91)	2.12 (1.09)	2.28 (1.19)	2.28 (1.07)
1E Examine actual teaching materials	2.69 (.75)	3.48 (.69)	2.15 (.88)	2.94 (1.02)	2.28 (1.11)	2.65 (1.02)
1F Examine national/state/local/professional curriculum/standards/guidelines	3.64 (.66)	3.16 (.74)	3.29 (.81)	3.27 (.90)	2.00 (1.08)	2.96 (1.06)
1G Examine transcripts of real K-12 classroom talk or student discussions	2.09 (.83)	2.72 (.90)	1.74 (.77)	1.88 (1.02)	2.05 (1.05)	2.08 (.97)
1H Watch or analyse videos of classroom teaching	2.78 (.80)	2.99 (.90)	1.42 (.62)	2.21 (1.01)	2.08 (1.09)	2.31 (1.05)
1I Discuss experiences from your student teaching (field work) in your university classes	3.21 (.70)	3.44 (.67)	3.16 (.78)	3.10 (.88)	3.37 (.74)	3.27 (.76)

Table 3. Mean score per item per programme (standard deviation between brackets)