What’s in it for me?
– How does a professional development programme meet science teachers’ career expectations?
Daugbjerg, Peer; Sillasen, Martin Krabbe

Publication date:
2017

Citation for published version (APA):
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How does a professional development programme meet science teachers’ career expectations?

Peer S. Daugbjerg, VIA UC, DK (pd@via.dk) – presenter and author
Martin K. Sillasen, VIA UC, DK (msil@via.dk) – author
1) A significant piece of research. Although it is difficult to convey much information in the abstract it would have been helpful to identify the unique features of QUEST and what the various findings actually mean. The meaning of the descriptors are opaque to me. But the methodology is interesting and innovative and the proposal overall has real importance.

2) Relate more closely to science education: this analysis does not seem specifically linked to science teaching, the same results are likely to be found for other disciplinary contexts. Notion of foreground needs to be explained more fully. Proposal could be more clearly linked to symposium objectives. Some abbreviations not explained: IBSE?
Poul, 30 years, 4 as teacher
- participating science teacher from Dandelion

<table>
<thead>
<tr>
<th>Danish interview transcript</th>
<th>English translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jeg blev mere gjort opmærksom på, at det man ser, og det man gør, det er altså, det man husker.</td>
<td>I have been made more aware, that what you see, and what you do, that is really, what you remember.</td>
</tr>
<tr>
<td>Så er det måske mere vigtigt at vide at indikatorpapir i cola bliver rødt fordi det er en syre end hvis de ikke kan huske alt muligt om $H^+$-ioner og alt muligt, som de ikke huske. Så er det første måske det vigtigste fordi de kan huske det.</td>
<td>So it is perhaps more important to know that litmus paper in cola turns red, because it is an acid, than when they can't remember every detail about $H^+$ and the like, that they can't remember anyway. Then perhaps the former is the most important because that is what they remember.</td>
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</table>

Introduction

- Many professional development programmes (PDP) deliver a systemic “one-size fits all” intervention for participating teachers (van Driel et al, 2012).
- 30 years of research in educational change document that many PDP-projects fail to meet their objectives (Fullan, 2007; Darling-Hammond, 2005).
- Teachers revert to their old personal working routines when the external pressure from a PDP ends (Fullan, 2007).

What can be learned about the relationship between a systemic perspective of a professional development programme and a personal perspective in teachers career considerations?
- How does teachers experience the intervention of a PDP?
- What career options and foregrounds do they express in relation to a PDP?

Research participants:
- Mainly 4 teachers from four of the participating municipalities participating in a large scale PDP in Denmark.
Today's presentation - three acts

Act 1
A standard systemic assessment approach provides a positive answer concerning teachers' learning outcomes.

Act 2
However, using narrative inquiry as an assessment tool provides a different picture of the participating teachers' learning outcomes.

Act 3
We combine data regarding the teachers' participation in collaborative elements in the PDP and the teachers' individual reflections on these elements related to their individual career foregrounds.

Act 1
The systemic PDP perspective and activities are framed by a concept of professional learning community (PLC) (Sillasen & Valero, 2013), which is characterised by:
- Collaborative sustained relationships.
- Shared spaces where participants meet.
- Diverse types of activities with different objectives.
- Different intensities in collaboration.
Research context: The professional development programme - QUEST

PDP-activities at three levels:
- 1. Teachers individual professional development
- 2. Professional learning networks in schools
- 3. Workshops in municipal science networks

Expectations for participating teachers’ outcome
- Improving student learning is the central aim for all PDP activities.
- Teachers are active in PDP activities.
- Teachers experience cohesion between their learning needs and PDP activities.
- PDP activities stretch over time to allow for experimenting with new teaching strategies in their own practice.
- PDP activities take place in a collaborative and supportive environment.
Active, inquiry based and collaborative: QUEST-rhythm

Meeting in School based PLN

NEW KNOWLEDGE ACTIVITIES

EXPERIENCES INQUIRIES SUGGESTIONS

Course module 1
3 days

NEW KNOWLEDGE ACTIVITIES

EXPERIENCES INQUIRIES SUGGESTIONS

Course module 2
1 day

Course module 3
1 day

Meeting in School based PLN

Period of 3-4 months

What's in it for me?
Methods

- Questionnaires to participating teachers and science education consultants (local school as well as municipal).
- Focus group interviews with participating teachers and local science education consultants (local school as well as municipal).
- Individual in depth interviews og observations with one teacher from each of the participating municipalities.

How has the QUEST rhythm worked in relation the last course module?

![Graph showing the support of QUEST rhythm in module 47 (N=51). The graph indicates that most respondents rated the support as "Well" or "Very well."](image-url)
A teacher reflected:

- ‘I think that [collaboration] evolves over time... We do not come back from workshops and say that this and this teaching idea works in this and this way and then our colleagues just use it without some discussion. This autumn, my closest colleague and I have collaborated in new ways. We now meet and plan activities that each of us subsequently use in our own class. Before QUEST, we would never meet to plan teaching activities collectively. That has changed. Our collective planning and subsequent evaluation of teaching activities has improved our confidence in experimenting with new teaching strategies’.

Act 2

Teachers career expectations are framed by:
- A personal interpretative framework or perspective
- The aspired foregrounds for participating in the PDP.

(Daugbjerg, 2015)
Foreground

- (Alrø et al, 2009; Skovsmose, 1994).
- Foreground expresses a present future meaning, i.e. it is prospective.
- Within mathematics teaching it has been empirically established that pupils’ dispositions for engaging in learning and teaching originate from a dynamic relation between their lived experience and their expectations to the future.

Birger, 47 year, 13 as teacher
- participating science teacher from Daisy

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<tr>
<td>Peer: Hvordan forventer du er det største udbytte ved at deltage i et projekt som Quest?</td>
<td>Peer: What do you expect to be the greatest outcome of participating in QUEST?</td>
</tr>
<tr>
<td>Birger: At få nogle kolleger der er med på det.</td>
<td>Birger: To have some colleagues who takes part in it.</td>
</tr>
<tr>
<td>Men det er det der med, at vi er ikke så gode til at arbejde sammen. Og det kunne jo være dejligt. Det synes vi også når vi har der her fagfærd, så har vi faktisk ret stor succes med.</td>
<td>But the things is, we are not that good at collaborating. And that would be nice. We also feel when we have these subject-fridays, then we do have a great success. And when</td>
</tr>
<tr>
<td>og når vi først får sat os ned, så tager det faktisk ikke så lang tid at prøve at Welie os ind på, hvordan et undervisningsforløb skal ligge ift. det enne vi nu gerne vil ind omkring</td>
<td>and when we do get together, then it actually doesn’t take that long to tune into, how to teach a subject we want to focus on.</td>
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</table>
Karl, 33 years, 7 as teacher 
-participating science teacher from Marigold

English translation

... ask people to go home and make progression-trees, which comes from the north-american ATLAS project, which is super, that I’m very glad to be introduced to. It was a very interesting presentation given by the two educators on that, I could really see something in it. And then ask us to go home and work it through at the school with some colleagues in 2 hours to get an idea of it, that doesn’t change a thing.

Laila, 51 years old, 21 as teacher 
- participating science teacher from Daffodil municipality

Danish interview transcript

English translation

... for det første så giver det tror jeg noget at være på kursus sammen det gør det altid. Men men netop med den der fordi det har været så hardt at skulle stå for noget naturfagsudvikling på skolerne, hvis man ikke har opbakning er det de færreste af os jeg har jo så været på hold med 2 der havde [opbakning] fordi de også var sammen men begge to er så rejst fra skolen nu. Så mens så alle vi andre det har været som at slå i en dyn, vi skiftede leder midt i det hele og så og så reg alle timerne og så forsvandt det hele bare... first of all I think being at a course together is valuable, it always is. However, it has been hard to be responsible for science teaching development at the schools, if you do not have support, it is the fewest of us who have had [support], I have been on a team with two who had [support], because they were together, but they both are gone from the school now. Therefore, for us others it has been like hitting a cushion, we changed the leader halfway and then all those hours went and then it all disappeared – boom.
Act 3

- Our primary interest is to understand the relation between the systemic and personal perspective, therefore we now combine data and methods that reveal how the participating teachers experience the possible participant career options given to the teachers by the PDP.

- the intended PDP foreground and the personal career expectation foreground.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poul, Marigold</td>
<td>Convergence:</td>
<td>... seamlessly personal and his colleagues’ development...</td>
</tr>
<tr>
<td>Birger, Daisy</td>
<td>Parallel:</td>
<td>Acts autonomously... disregards the support from QUEST and other systemic supportive networks...</td>
</tr>
<tr>
<td>Karl, Dandelion</td>
<td>Open-ended:</td>
<td>Addresses the gap... searching for stepping stones... keep all career options open...</td>
</tr>
<tr>
<td>Laila, Daffodil</td>
<td>Challenged:</td>
<td>Addresses the gap... few option possibility to fulfill the intention... considering leaving lower secondary teaching...</td>
</tr>
</tbody>
</table>
Teacher experience and PDP participation foreground

- QUEST provides a systemic perspective on professional development that focus on interchanging collaboration at different levels and between different types of participants.
- Teachers who experience some kind of kinship between on the one hand their own personal career foreground and on the other hand the systemic PDP agenda and organisation are more positive towards the PDP intervention.
- Four different relations were found
  - Increasingly **convergent** entangling foreground
  - Mutually enriching but distinctly **parallel** personal and systemic foreground
  - Multiple **open-ended** foreground
  - **Challenged** foreground
- Teacher experience and foreground form their personal interpretative perspective through which the teachers relate to the local municipal framework and the PDP.

Align participants’ expectations with PDP’s intentions will

- clarify the aims of all involved parts
- clarify the opportunities offered to the participants
- help educators to address the needs and expectations of the participants
- help managers to state realistic expectations
- clarify the limitations of all involved parts
- ...
Assessment of PDPs

- A systemic approach combined with an individual participant approach brings forward a richer description of the teachers’ outcomes in the PDP.
- Can make it clear which of the teacher’s individual career expectations the given PDP can meet, and what part of the teacher’s foreground must be pursued in another context.

Is this just a nordic issue?

The Nordics idea of equity and democratic participation is implied in the QUEST design as being the best for everyone.

Act2 reveals teachers act in accordance with their private aspirations and desires for a career foreground, which means that they do not necessarily “stay put” as teachers. Their career choices are individual and unique.

So QUEST is intended to be ‘Nordic’, but the teachers act as ‘neoliberals’.