

# Experiences from Latvia – science teachers learning from other teachers to improve teaching and reflection skills

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The observations of lessons (more than 700 Science and Mathematics lessons) show a strong need to support the teachers to improve their teaching technique and the understanding of the student-focused teaching process. In order to learn this from others and to reduce doubts about the students' outcomes, it is useful for teachers to observe and reflect upon their colleagues' teaching.

- How to organize an exchange of experience between teachers in order to support them in the classroom practice was an issue to solve.
- How can teachers understand, if in the classroom teaching practice they are on the right way on using strategies new for them?
- How could we help the science teachers, working alone in teaching the subject in their schools, to have a different teaching experience?

We find it very important for the dissemination of PROFILES ideas to look at the idea of having teachers as leaders – working with other teachers on how to teach scientific inquiry in the classroom. How to help teachers to go from being a teacher-learner to a teacher-leader according to the discussed PROFILES philosophy.

## The professional development model – teachers learn from other teachers

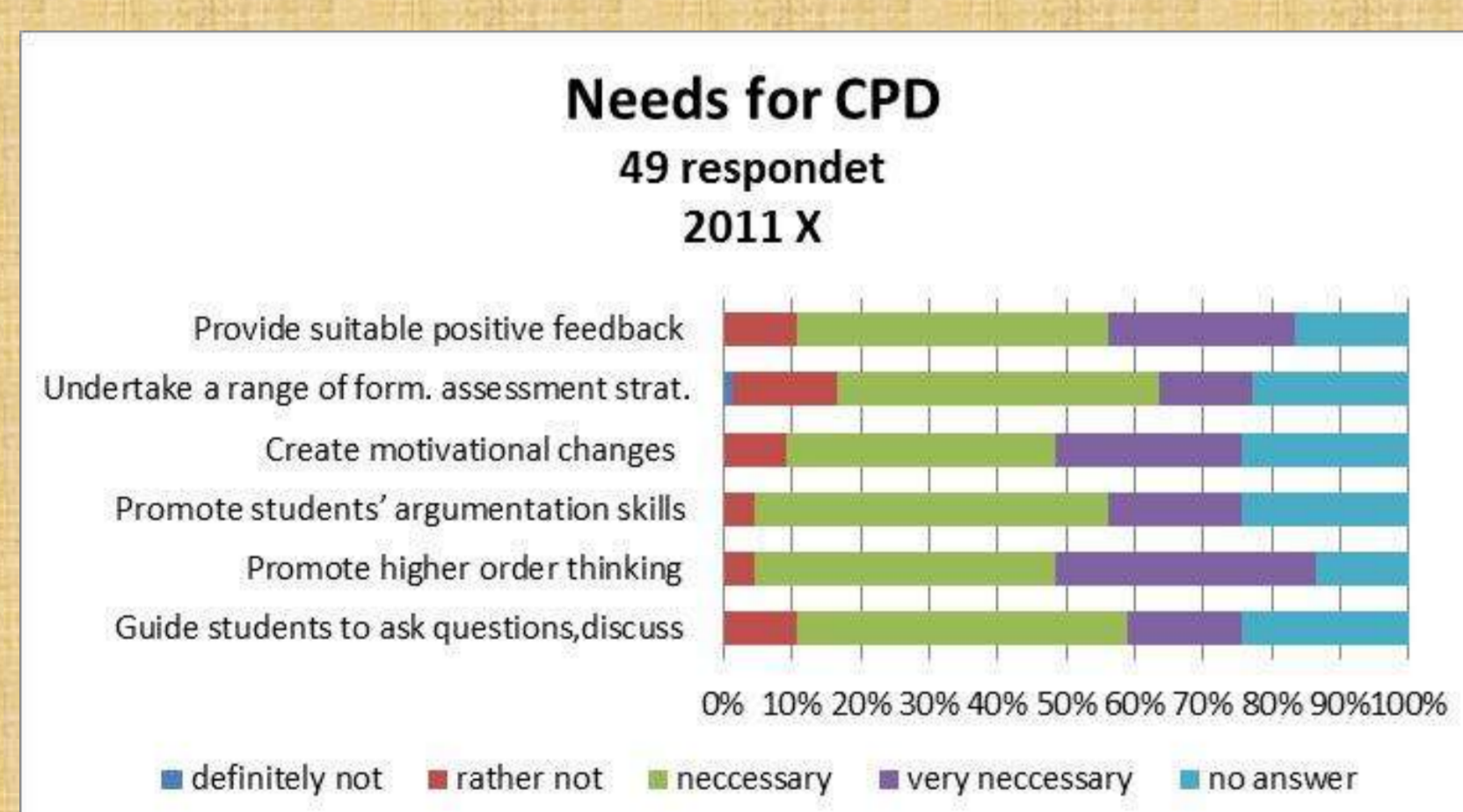
Our previous experience shows a strong need to have a team (a minimum of 3 people) of teachers working together for the successful implementation of the new ideas in the school. The model of school-based workshop was created within our teachers CPD programme during the time period from November 2011 to April 2012.

The network included teachers from 22 schools. Science teachers from 5-6 schools were to form one group and take part in the school-based workshops. Every workshop was held in a different school.

## The strong need to improve teaching and reflection skills

There are a lot of chemistry, physics and biology teachers mostly working alone with teaching the subject in their school.

The teachers themselves have found a very strong need to improve their reflection skills.



## The CPD model included the following three phases

<b>planning and preparation</b>	Teachers together with the experts planned and prepared open lessons according to the focus of the seminar Experts planned the input sessions
<b>workshop in a school</b>	Input about teaching and learning skills we focused on Observing teaching in practice (usually, two open lessons for a teacher-learner) A focused group discussion – analysis and reflection on the teaching and learning practice observed.
<b>evaluation</b>	

The set of topics for the workshop according to the teachers' needs were:

- How to reflect on teaching and learning science. The model of analysis and reflection on the open lesson.
- Teaching scientific inquiry – a student-focused teaching. Case studies.
- The development of HOCS through scientific inquiry.
- Students' motivation for learning and feedback through scientific inquiry.
- Formative assessment in the science classroom.

Every teacher in the group took the role of a teacher-learner (from the experience of others) a teacher-teacher (with potential of becoming a teacher-leader) to open his/ her classroom to colleagues learning and to be a leader of the group reflection session.



## Results and discussion

The final questionnaire about the teachers' gains was organized in June 2012. Teachers responded that during the workshops they had improved

- their skills for planning and teaching scientific inquiry (90%)
- the formative assessment strategies (86%)
- facilitated the skills to motivate students (76%)

It was mentioned by the experts that, during the period of changes, teachers first of all try to focus on the formal procedures and not the essence of the new-for-them teaching strategies as it was mentioned in the introduction. It takes time for real changes in teaching practice to take place. The successful organisation of workshops depends on understanding on behalf of the school leaders on the importance of this kind of CPD.

Conduction lessons at the seminars and analysis of my lessons	fully agree
• provided an opportunity to a professional evaluation of strengths and weakness in my practice	62%
• I've improved the ability to reflect on my work with colleagues	58%
• I've learnt to listen to my colleagues' suggestions	57%

Observing the lessons of the colleagues and participation in analysis of these lessons	fully agree
• Helped to improve my lesson planning, lesson structure	57%
• Perfected my ability to observe facts and base my analysis on them	57%
• I've learned together with colleagues to reflect on the meaning and effectiveness of the lesson	55%

*I've gained a skill to critically evaluate and analyse both the lessons conducted by myself and my colleagues, observe the positive and base on that.*

*I learnt to distinguish between what I really know and can and what I appear (I believe) to know.*

Experts have found this model very successful for teacher CPD – to learn from each other by working together – teachers of different science subjects from one school and one subject teachers from other schools. It gives the teachers more experience in teaching a subject and self-awareness that your experience is useful to other teachers in your school at the same time. The next steps could be more focused workshops for improving teaching technique in more detail.

## LITERATURE

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