

EXPLORING PARTNERSHIP WITH TEACHER EDUCATION AS PROFESSIONAL DEVELOPMENT FOR SCIENCE TEACHERS

In this study we explore how teachers, who are part of a science teaching innovation project for pre-service teachers, experience their participation. We have used a qualitative approach inspired by constructivist grounded theory and conducted semi-structured interviews with five participating teachers. In our preliminary results we have found that the teachers experience their participation as a means to personal professional development and we argue that more research is needed to explore how different aspects of cooperation between science teaching in schools and science teacher education can play a part in professional development of the cooperating teachers.

Keywords: Professional development, Teacher education, science teaching

INTRODUCTION

The present study is part of a larger research project researching the implementation of a privately funded honors college at the teacher education of a University College in Denmark. We explore how in-service teachers involved in the program as supervisors to pre-service teachers experience their participation. Based on initial analysis we developed the research question: How can cooperations between in- and pre-service teachers serve as a means to professional development for involved in-service teachers?

CONTEXT

The researched honors college has the explicit purpose to develop science teaching at primary- and lower secondary level. The honors college was implemented in 2018 and participation in the program adds an extra 30 European Credit Transfer System (ECTS) to the last two years of the ordinary four-year teacher education.

A third of the ECTS were designated to a cooperation between the pre-service teachers and a school. This cooperation was termed a “partner-school project”. Each pre-service teacher was assigned an in-service teacher as a supervisor. The main purpose of the cooperation was for the students to develop competencies within science education development in schools. It was also hoped that science teaching at the involved schools would improve as a result of participating.

THEORY

Partnerships or cooperations between teacher education and in-service teachers are often researched with a focus on the pre-service teacher (Goodfellow & Sumsion, 2000; Landt, 2004). However, studies of cooperation between in-service and pre-service teachers have shown that the experience can benefit both groups. As such, being a cooperating teacher has potential to aid the professional development of in-service teachers (Landt, 2004; Lloyd et al., 2020). In this context, we define teacher professional development in line with Avalos (2011): “...professional development is about teachers learning, learning how to learn, and transforming their knowledge into practice for the benefit of their students’ growth.” (Avalos, 2011, p. 10)

Desimone (2009) argues for five critical features which support teacher’s professional development: 1) Content, 2) Active Learning, 3) Coherence, 4) Duration and 5) Collective Participation. Postholm (2012) adds to Desimone's (2009) list by arguing that in order for professional development to be successful, teachers need to be willing to develop professionally and to have sufficient time available to do so. Postholm

(2012) further mention the importance of inviting experts to take part in the professional development in order to ensure introduction of new knowledge.

METHOD

This study is inspired by a constructivist grounded theory approach as described by Charmaz (2006). The data consists of five semi-structured interviews, around 45 mins in length. The interviews were conducted in the autumn of 2022 with in-service teachers who had supervised pre-service teachers from the first and second cohort of the honors college.

The in-service teachers invited to interviews were those who had been involved for at least the final year of the partner-school project and who were still working as teachers. Nine in-service teachers met the criteria. Invitations were sent out via e-mail. If un-replied a follow up e-mail was sent after two weeks.

Interviews were professionally transcribed and coded in atlas.ti.

RESULTS

An important aspect of the partner-school projects was to give the pre-service teachers and the in-service teachers freedom to define content and structure of the project, as long as it involved development of science teaching at the schools. As a result, the projects varied greatly and so did the in-service teachers' experience of participating in the projects. However, a common denominator was the experience of personal professional development. Broadly speaking, the respondents describe their cooperation with in-service teachers as a source of new content and new approaches to science teaching:

I don't want to just repeat what I have always done. Then it is nice when someone comes in and says "Did you know about this?" And it's like, no, I didn't know about that at all. (Teacher 1).

This experience of learning new content can be viewed as a critical feature which aids professional development. The statement that it is "nice" to learn about new things which supports Postholm's (2012) addition to the critical features regarding willingness to develop professionally. Another support for Postholm's addition is in a statement relating to time. Teacher 1 mentions how time constraints prevent him from developing his teaching and that cooperation with the pre-service teacher proved to be a source of extra time:

Regarding my time for lesson planning...a lot of it is spent in meetings and all sorts of things, I don't have time to find partners (...) and [the pre-service teacher] had a lot of time to do exactly that, find relevant contacts. (Teacher 1).

When Postholm (2012) refer to time and professional development, she argues that for professional development initiatives to work, teachers need sufficient time. In this example, the in-service teacher is conscious of how time constraints limit his professional development and view the cooperation with the pre-service teacher as an extra time resource.

Another example relating to content as a critical feature, is an in-service teacher who keeps returning to an experience he had with an assessment method the pre-service teacher had tested after a field trip. The method involved qualitative interviews with the students about the trip:

...had it been an ordinary teacher on that field trip, who had maybe made a different kind of assessment, maybe written, then you might not...you might think that some of the students hadn't learned anything. As it turns out (in the qualitative assessment), they had learned a lot. (Teacher 2).

The experience of gaining a deeper understanding of what the students had learned in a given situation through interviews made the in-service teacher think about how he could use this in his practice in the future.

DISCUSSION AND CONCLUSIONS

The focus of the partner-school projects was development of science teaching in the involved schools and of education of the pre-service teachers. However, the experience of the participating in-service teachers resembles professional development as defined by Avalos (2011); they describe acquiring new knowledge of the students' learning and how they make use of what they learned in their profession as teachers. In order to analyse why a project, which did not have professional development of in-service teachers as an explicit aim, proved to be valuable as such to the in-service teachers, we turn to Desimone (2009) and Postholm (2012). Of Desimone's five critical features the most prevalent in our data was "content". Furthermore, Postholms additions of sufficient time and willingness for professional development are present. Postholms third addition, the importance of experts as a means to introduce new knowledge, was also present – but in this case the providers of new knowledge were pre-service teachers.

Based on our findings, we believe that cooperation between experienced teachers and pre-service teachers have the potential to benefit both parties involved, thus supporting previous research (Landt, 2004; Lloyd et al., 2020). Since our study is small and considering the lacking focus on professional development of the teachers in the partner-school projects we suggest further exploration of how cooperations between in- and pre-service teachers can serve as a means for professional development in cases where critical features as argued by Postholm (2012) and Desimone (2009) are added.

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