

**6<sup>th</sup> International Symposium**

**of the**

**Out-of-field  
Teaching Across Specialisations  
(OOF-TAS)  
Collective**

**1-2 September 2019**

**Hamburg, Germany**

# Welcome

Welcome to the 6th symposium for the OOF-TAS Collective, held in Hamburg, Germany, on September 1-2, 2019, prior to the ECER Conference.

The theme for the symposium is *'Delving deep and wide into teaching out-of-field: Using evidence to inform change'*.

This theme focuses on the idea that changes in practice and policy are best brought about through evidence-based research. A mounting body of evidence about the out-of-field phenomenon is emerging from a number of countries. But what else needs to be known? And for what impact?

We hope that the presentations stimulate discussion of how empirical evidence can inform practice and policy changes, what additional research is needed, and the challenges of doing research in this field.

We plan to build on previous symposia and come up with a framing of future research that can inform our individual and joint research endeavours. There will be time in the program to allow for some rich research discussions.

## Venue

"SiH Seminarraum in Hamburg"

Mexikoring 15, 22297

Hamburg,

Germany

## Short program

Day 1. September 1st: 10:00-17:00 + dinner together at a nearby restaurant

Day 2. September 2nd: 9:00-16:00

# Program

## Sunday, September 1

9.30 to 10.00	<b>Arrival</b>
10.00 to 10.20	<b>Welcome and introductions</b>
10.20 to 11.00	Presentation 1: Dennis Sunal, Cynthia Sunal   <i>USA</i>
11.00 to 11.40	Presentation 2: Doreen Mizzi   <i>Malta</i>
11.40 to 12.20	Presentation 3: Frances Quinn et al   <i>Australia</i>
12.20 to 1.20	<b>Lunch</b>
1.20 to 2.20	Presentation 4: Günter Törner   <i>Germany</i>
2.20 to 3.00	Presentation 5: Judith Lagies   <i>Germany</i>
3.00 to 3.20	<b>Afternoon tea</b>
3.20 to 5.00	<b>Research discussions 1</b>

## Monday, September 2

8.30 to 9.00	<b>Arrival</b>
9.00 to 9.20	<b>Introductions</b>
9.20 to 10.00	Presentation 6: Linda Hobbs, Raphaela Porsche   <i>Australia, Germany</i>
10.00 to 10.40	Presentation 7: Julie Luft, Elana Worth, Harleen Singh   <i>USA</i>
10.40 to 11.00	<b>Morning Tea</b>
11.00 to 11.40	Presentation 8: Smadar Donitsa-Schmidt, Ruth Zuzovsky, Beverley Topaz   <i>Israel</i>
11.40 to 12.20	Presentation 9: Esti Rahayu   <i>Malaysia</i>
12.20 to 1.00	Presentation 10: Teresa Beck   <i>Germany</i>
1.00 to 2.30	<b>Lunch</b>
2.30 to 4.00	<b>Research discussion 2</b>

# Abstracts

## Presentation 1

### Supporting Teacher Professional Development for Out-of-Field Teaching in High School Physics

Dennis Sunal, Cynthia Szymanski Sunal, The University of Alabama

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This investigation centered on the impact of a specialized professional development model on high school science teaching and student learning. The study included 41 mostly out-of-field physics teachers from a state-wide, diverse sample of U.S. teachers. Classrooms were observed multiple times over three years during continued professional development experiences. Results of observer visits found the professional development model fostered significant differences in the way teachers structured their classrooms, conducted teaching, and engaged students. Increased student outcomes were found to be related to the amount of teaching reform implemented. The findings were obtained using a convergent parallel mixed method research design. The results provided a rationale for continued professional development focused on reform among teachers of physics.

Keywords: out-of-field teaching, professional development, physics, secondary education

## Supporting Science teachers teaching outside their science specialism

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In Malta most science teachers are likely to have a teaching degree level qualification specialising in one science subject. When teaching Integrated Science in the first two years of secondary school, teachers are required to teach all science disciplines (Chemistry, Physics and Biology). This implies that science teachers will be teaching outside their area of science specialism, that is they will be teaching a subject/s that was not studied at Degree or Advanced level and potentially not even at secondary level since Physics is the compulsory science at secondary school. A study was carried out to investigate how a group of science teachers who are non-chemistry specialists, deal with the teaching of Chemistry topics as they participated in a year-long professional development programme tailored for their needs. The study followed a qualitative methodological approach. Data was gathered through teacher interviews, classroom observations and the researcher's reflections. This paper focuses on the design of the professional development programme and on the teachers' views of their professional learning experiences. It aims to outline the core features of professional learning which are essential to support teachers teach outside their science specialism to help them gain confidence in their role as generalist science teachers.

Keywords: teaching outside one's area of science specialism, teaching Integrated Science non-Chemistry specialist teachers professional development

# Professional Learning and Development Landscape for Out of Field Teachers

Frances Quinn, Keith Wolodko, Robert Whannell, University of New England

Linda Hobbs, Christopher Speldewinde, Deakin University, UNE

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In this paper we adopt the term Professional Learning and Development (PLD) to denote a view of teacher professional growth and capacity building which is collegial, collaborative and valorises the existing professional knowledge of teachers, and builds upon individual teachers' values, concerns, strengths and missions, embedded within the context of their day to day work. This view of teacher PLD is consistent with approaches, and models such as coaching and mentoring, learning and making meaning through participation in a Community of Practice and action research. This paper is drawn from a large study we conducted involving 47 interviews with 20 teachers who were teaching in both out-of-field and in-field contexts in Australia. Our research questions for this presentation are: 1) What PLD needs are expressed by teachers in the context of their out-of-field and in-field teaching? 2) Is there a difference between the focus of PLD experienced by teachers between their in-field and out-of-field contexts? 3) Is there a difference between what teachers see as successful PLD in their in-field and out-of-field contexts? The discourse around teaching out-of-field often focusses on filling gaps in content knowledge. Consistent with this, we found that the need for PLD related to "Disciplinary content knowledge" was much more frequently expressed by teachers in their OOF context than in their in-field context. However, more highly ranked than this expressed need, regardless of teachers were teaching out-of-field or in field were "learning how to identify personally relevant PLD" and "access to relevant teaching resources". The content focus of PLD that teachers reported experiencing was similar across their out-of-field and in-field contexts, with the two most frequent responses for each context being "pedagogy", and "Curriculum Delivery" . The third highest ranked content focus was "Disciplinary content knowledge" for the out-of-field context and "Curriculum development" for teachers in their in-field context. Finally, effective PLD methods were those that teachers expressed as meeting their developmental needs in either the short or long-term. The top five most effective methods expressed by teachers were, in order of frequency for the out-of-field context , "teacher-identified PLD", "use of professional community", "reflection", "external providers" and "mentorship" . "Reflection" ranked more highly than "external providers" only for teachers in their out-of-field context.

Keywords: Professional Learning, Professional Development, content knowledge, mathematics, science

## **Do we have to distinguish between OOFT-mathematics in primary schools versus lower secondary schools?**

Günter Törner, University of Duisburg-Essen

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In Germany, mathematical teacher education at university clearly differentiates between primary school education (grades 1 to 4) and that for other upper school grades. In this respect, support measures to train out-field-teaching teachers, also should distinguish between these school levels. The presentation will make it clear that there are many technical and content-related reasons for tackling the problems separately. Also, social reasons not to serve heterogeneous groups together are not unimportant in the training. In addition, universities should not take sides in the actual discussion of individual teachers' unions about the so-called "indifferent salaries". This is further proof that professional development initiatives should be carefully configured in the educational landscape. However, since there are basic measures for the teaching of mathematics, there are similarities in the area of epistemological worldviews of school mathematics, which must be emphasized. Decisive for our concept of the training is that not only technical deficits are to be compensated, but also with the non-professionally trained teachers also attitudes must be developed.

# Reconstructed practices of mathematic out-of-field primary teachers

Judith Lagies, University of Osnabrueck

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Based on my qualitative research, in which I have reconstructed practices of non-mathematics primary school teachers in the form of differentiated typification, I can formulate both research challenges and practical implications based on the status quo. Based on these considerations, a discussion on possible changes within educational policy in the plenum can follow. The material shows that the interviews conducted, in which the teachers were addressed as non-specialists, do not confirm a presumed non-specialist habitus, but rather continue to support the strength of the class-teacher principle and show the interaction of professional and organisational logic in a differentiated way. Interviews, which address teachers as primary school teachers and not as non-specialists, could show to what extent non-specialist teaching is negotiated and what role subject cultures and principles really play in the primary school profession. When non-specialists teaching is understood as a problem needing attention, casuistry can be used for all phases of teacher education as an access to more professionalism. But also dimensions of professionalism as biographical and communicative resources can be made usable in everyday professional life under guidance. Self-competence can have a supportive effect in coping with contradictory demands for action from primary school teachers teaching outside the subject area. It appears that the structures in primary schools generate a lack of specialist knowledge and thus place highly complex demands on their teachers. My typification shows a differentiated handling of these requirements, whereby three out of four types show a deprofessionalisation in their non-specialist teaching. This considerably increases the pressure to act for educational policy.

Keywords: Profession contra organisation; deprofessionalism; reconstructed practices primary schools



## **Australian and German principals' views and support structures for out-of-field teachers**

**Linda Hobbs, Deakin University**

**Raphaela Porsch, Münster University**

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Research has shown that school leader practices can influence teachers' lived experiences of teaching out-of-field. Less is understood, however, about attitudes towards out-of-field teaching, and then how these attitudes influence the perceived support needs of these teachers. This study of out-of-field teaching in Germany and Australia investigates principal attitudes and school practices overall, as well as any indicative differences between countries. A qualitative multiple case study was conducted using data generated from projects both countries focusing on systemic conditions influencing out-of-field teaching. This paper focuses on interviews conducted with a small set of principals and/or vice-principals from secondary schools. The analysis showed that principals' attitudes differed in relation to the importance of teachers' subject background knowledge, the relative importance of the subject in question, the possible consequences that might arise, and how teachers were positioned as learners. Principals referred to in-school and external supports, but teachers' initiative and drive was seen to be an important mediating factor to suitability of a teacher to teach out-of-field. Unique to this study are four broad attitudes relating to the nature of teaching, teaching as: pedagogical, passion, capability, specialised. Each indicated different perceptions about the focus of the support needs of out-of-field teachers, and then how such support might be provided. Given that attitudes can determine behaviour and decision-making, this research helps to understand why leadership responses to out-of-field teaching can vary across schools.

Keywords: Teaching out-of-field, school leadership, beliefs and attitudes, teacher learning

## Out-of-field teaching in science: A layered perspective

Julie Luft, Elana Worth, Harleen Singh, University of Georgia

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This is an unstructured case that looks at the layers surrounding an out-of-field teacher in science. The experiences of the science teacher (who is 100% out-of-field), the decisions of the principal, along with the views of the colleagues compose one layer of this case. The policies at the district and state level compose another layer. The national policies guiding the reporting of out-of-field teaching is the final most outer most layer. From these different positions, it is possible to see how out-of-field teaching occurs as a result of the different factors that are meant to prevent it. At this point in time, we have a school identified and will begin interviews in May or June.

Keywords: state policy, principal, teacher, instructional practice, science

# Becoming an "In-Field" Teacher: Motivations and Perceptions of "Out-of-Field" Teachers in Science and English

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The phenomenon of out-of-field teaching in Israeli schools has grown tremendously in the past few years due to a massive teacher shortage, particularly in core school subjects such as mathematics, science and English as a Second Language (Donitsa-Schmidt & Zuzovsky, 2014, 2016). The purpose of this research was to uncover the reasons that led out-of-field teachers to enroll in a teacher training program and to examine to what extent these studies have impacted their content knowledge, pedagogical content knowledge, curricular knowledge and knowledge of the learner as well as their self-confidence as teachers. Participants included 50 out-of-field teachers teaching English and science who were studying towards their teaching credentials in these two fields at a large teacher education college in Israel. The research instrument included a self-report questionnaire which was distributed to them in class towards the end of the academic year. The questionnaire included questions pertaining to the reasons that led out-of-field teachers to teach without proper qualifications, the reasons for their enrollment in a teacher training program, the degree to which the program contributed to their knowledge and has changed their teaching, and finally their perceptions towards out-of-field teachers and teaching. Findings will help us better understand the characteristics and needs of out-of-field teachers in English and science in the Israeli context. They will also be used to revisit the training program offered to these teachers.

Keywords: Out-of-field teachers, in-field teaching, motivations, perceptions, teacher education program

## Trying on teaching for fit - Professional identity development among out-of-field teachers in Indonesia

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Situated learning theory understands learning to be a sociocultural activity, and individuals experience identity development as they participate in communities of practice. The purpose of this study was to understand how Indonesian out-of-field teacher novices' learning in a classroom is a situated activity and how this learning influences those teachers' identities. A qualitative research design was employed because it allows to understand how each participant constructs meaning of participation in learning how to teach and how situational factors influence each participant's learning processes in a natural setting (Bogdan & Biklen, 2007; Merriam, 2009). Using a purposeful sampling method, this study selected five Indonesian in-service teachers who started teaching as out-of-field novices through classroom observations, and semi-structured interview. This study revealed that social interactions, learning tools, the physical setting, and Indonesian culture were embedded in the course and shaped the learning processes. This study also found that the participants' learning in their respective schools influenced their identity. The findings of this study support the important assumption of situated learning, which is "learning thus implies becoming a different person . . . to ignore this aspect of learning is to overlook the fact that learning involves the construction of identities" (Lave & Wenger, 1991, p. 53).

# **Biographical transitions and experiences of out-of-field and teaching-across-specialization teachers in elementary school in Germany**

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According to the continuously rising demand and the related rising gap of teachers (not only in primary schools) the educational ministry pursues new educational policy strategies in Germany. One of these strategies is the concept of 'Seiteneinsteiger\_innen', a teaching system where out-of-field (OOF) and teaching-across-specialization (TAS) teachers access the teaching profession without specific teacher training but a higher academic degree. Based on a paradigmatic appreciation, we accompany the new teachers for 2 years during a further training program. Besides a standardized questionnaire (n=114) for sociodemographic and educational background data, we focus on the biographical transitions of these career entrants on their way to the teaching profession and a new professional identity. By guided interviews with narrative moments, we try to reconstruct this process by reflecting their own biographical career, to get closer to changing moments, beliefs and ideas about teaching and in particular their teaching experiences as an out-of-field and teaching-across-specialization teacher. In the presentation, therefore, a first insight into the described transitions, changes and experiences shall be given.

Keywords: Biographical transitions, professional identity, out-of-field teaching, teaching-across-specializations, Seiteneinsteiger

## Research sessions

### **Session 1. Discussing the theme**

*'Delving deep and wide into teaching out-of-field: Using evidence to inform change'.*

This theme focuses on the idea that changes in practice and policy are best brought about through evidence-based research. A mounting body of evidence about the out-of-field phenomenon is emerging from a number of countries. But what else needs to be known? And for what impact?

### **Session 2. Where to from here?**

How do we proceed as a group?

Do we need to change our name?

An outcome of this meeting will be to build on the ideas from our [first meeting in 2014](#) and come up with a framing of future research that can inform our individual and joint research endeavours.