ATEE Conference 2016
Educating the Best Teachers: a Challenge for Teacher Education
22-24 August 2016 – Fontys University of Applied Sciences, Eindhoven, the Netherlands

DIGITAL ABSTRACTBOOK
During the ATEE Conference, participants can choose from 160 contributions in the parallel sessions. The abstracts are divided over 6 sessions:
- Monday, 22 August:
  o Parallel sessions 1: 12.00 – 13.00 hours
  o Parallel sessions 2: 14.00 – 15.30 hours
- Tuesday, 23 August:
  o Parallel sessions 3: 09.00 – 10.30 hours
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Meaning of the colors:
Workshop = green
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RDC: In-Service learning and the Development of Practice  
Subtheme: School-based teacher education  
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RDC: Primary and Pre-primary education  
Subtheme: Innovation  
Mind mapping / student questioning / teacher guidance

100 – Dutch professional Standard of Teacher Educators and the binding force of voluntary professional registration, a shared responsibility  
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RDC: Professional Development of Teacher Educators  
Subtheme: Professional roles of teacher educators  
Professional development / professional dialog / registration

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RDC: Professional Development of Teacher Educators  
Subtheme: School-based teacher education  
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151 – High quality differentiated instruction - a checklist for teacher professional development on handling differences in the general education classroom  
Wouter Smets, Karel de Grote Hogeschool, Belgium  
RDC: Professional Development of Teachers  
Subtheme: Innovation  
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210 – Voicing in collaboration: a challenge for innovative teachers  
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Botagoz Issabekova, Nazarbayev Intellectual School, Kazakhstan
RDC: Professional Development of Teachers
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Emily van Gool, Fontys University of Applied Sciences, the Netherlands
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RDC: Secondary Teacher Education
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RDC: Teacher Education and Digital Technology
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Olzan Goldstein, Kaye Academic College of Education, Israel

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Cagri Ozkose-Biyik, Yasar University, Turkey, Oner Uslu, Ege University, Turkey

RDC: Professional Development of Teachers
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RDC: In-Service learning and the Development of Practice
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Shawna Faber, The University of British Columbia, Canada

RDC: In-Service learning and the Development of Practice
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Annerieke Boland, Anne Arbouw, Inouk Boerma, iPabo University of Applied Sciences, the Netherlands

RDC: Primary and Pre-primary education
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Maaike Kenter, Windesheim University of Applied Sciences, the Netherlands
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Ellie Abdi, Montclair State University - East Orange School District, United States of America
RDC: Education for Social Justice, Equity and Diversity
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Eric Verouden, Fontys University of Applied Sciences, the Netherlands
RDC: Professional Development of Teacher Educators
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Carine Strebel, Stetson University, United States of America
RDC: Professional Development of Teacher Educators
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RDC: N/A
Subtheme: School-based teacher education
European Commission / teacher education

133 – Motivate, educators’ core business - A motivational minor based on the principle: practice what you preach, will supply the participants with tools to motivate students
Ellen Siebenlist, Fontys University of Applied Sciences, the Netherlands
RDC: N/A
Subtheme: Innovation
Autonomy / belonging / competence / motivation / self-regulation
147 – Inter-disciplinary practical activities for the natural sciences: Using practical work to support big questions in science

Milan Stojkovic, Freie Gemeinschaftsschule Armin Mueller Stahl, Germany, Linda Hobbs, Deakin University, Australia, Laurinda Leite, University of Minho, Portugal
RDC: Science and Mathematics Education
Subtheme: School-based teacher education
Inclusive and integrative contents / natural science / practical work and activities

172 – Selecting prospective students: Can shaky legs still produce a stable stool?

Piet Murre, Gerrit Beunk, Driestar University, the Netherlands
RDC: Secondary Teacher Education
Subtheme: Innovation
Predictive validity / prospective students / selection

209 – Do-It-Yourself in teaching practice

Miroslava Cernochova, Tomas Jerabek, Petra Vankova, Charles University of Prague, Czech Republic
RDC: Teacher Education and Digital Technology
Subtheme: Innovation
Digital / do-it-yourself

25 – Mobile Technologies: A wake-up call for teacher education?

Paul Hopkins, Kevin Burden, University of Hull, United Kingdom
RDC: Teacher Education and Digital Technology
Subtheme: School-based teacher education
Competencies / mobiles / teacher standards

8 – Expansive practice in the practicum experience in teacher preparation

Rosalyn Hyde, University of Southampton, United Kingdom
RDC: Secondary Teacher Education
Subtheme: School-based teacher education
Practicum / secondary teacher preparation

48 – Changing roles: teaching divers(ity)

Wim Cuypers, Serge Coppens, Karel de Grote-University College, Belgium
RDC: Education for Social Justice, Equity and Diversity
Subtheme: Professional roles of teacher educators
Diversity in classroom / professionalization / team

191 – Teacher Educators’ Perception of Their Professional Roles and Its relation to Professional Identity: Perspectives from Turkey

Meral Besken Ergisi, Karadeniz Technical University, Turkey
RDC: Professional Development of Teacher Educators
Subtheme: Professional roles of teacher educators
Professional identity / teacher educators / teacher roles
Teacher educators share stories of innovation through collaborative discussion and writing. Interrogating the process and seeking critical conversations

Doreen Rorrison, Charles Sturt/Adelaide Universities, Australia, Jeana Kriewaldt, University of Melbourne, Australia, Angelina Ambrosetti, Central Queensland University, Australia, Ros Capeness, Queensland College of Teachers, Australia

RDC: Professional Development of Teacher Educators
Subtheme: School-based teacher education
Innovation / professional experience
Parallel sessions 1
Towards a pedagogy of work-based teacher education. Learning from good examples of practice

Miranda Timmermans, Avans University of Applied Sciences, the Netherlands, Marielle Theunissen, Rotterdam University of Applied Sciences, the Netherlands

RDC: In-Service learning and the Development of Practice
Subtheme: School-based teacher education

Pedagogy of workbased education / workbased-teaching / workplace learning

Abstract
Since 15 years now, schools and teacher education institutes in The Netherlands have built partnerships with joint responsibility in educating future teachers for Kindergarten, Primary and Secondary and for Vocational Education. School-based teacher education is organized around learning to teach in authentic situations, mostly called workplace learning. School-based teacher education however is more than just giving students the opportunity to learn in authentic contexts. Guidance and 'work-based education' are necessary to support and stimulate students' teachers learning and to connect theory with practice and the other way around. Partnerships develop their own practices. Interested in the diversity of 'work-based education' practices that are used, a professional learning community of school-based and institute-based teacher educators from different partnerships started a research. Research question was: what activities do school-based teacher educators do at the workplace to support students in becoming competent teachers? They gathered a lot of examples of practices and discussed why these examples are good, especially focused on connecting theory and practice and visa versa.

In this active workshop, after a short theoretical introduction, some of the examples of work-based teacher education are shared, explained and discussed with the delegates. After that the delegates, who are working in the field of or known with school-based teacher education, are invited to bring in their own examples and discuss them with the group.

Theoretical background and importance.
School-based teacher education is built around workplace learning. Workplace learning enables student teachers to experience being part of the school community as 'colleagues' and to participate in all teaching and teacher related activities. But school-based teacher education is more than just giving students the opportunity to learn in authentic contexts. The most important aspect is the daily guidance of learning how to act and think as a teacher, working with pupils and the school curriculum. This requires different pedagogical approaches than those used at the institute. Three important features of a pedagogy of work based teacher education can be identified based on Billett (2001):

The affordance (or invitational quality) of the school which is facilitated through seeing student teachers as colleagues, opening up all teaching activities for student teachers and having a clear policy for initial teacher education
The agency of student teachers i.e. their individual abilities and willingness to participate in school and to be supervised
Structure aimed at integrating theory and practice:
during actual teaching to support the student teacher in learning to think and act as a teacher in a particular context.
after teaching, or other school experience, to aid the student teacher in rethinking knowledge needed to act in new situations and other contexts.

Working this way is rather new for all the stakeholders. In practice, based on the research of Timmermans (2012), the affordance of these partnerschools is still based on the individual decisions of mentors instead of on shared views regarding the education of student teachers or on a thought through work-based pedagogy.

In this active workshop, after a short theoretical introduction, some of the examples of work-based teacher education are shared, explained and discussed with the delegates. After that the delegates, who are working in the field of or known with school-based teacher education, are invited to bring in their own examples and discuss them with the group.

We'll learn from practices in other countries and together we elaborate the idea of a work-based pedagogy.

With school-based teacher education as a central topic in a lot of countries it is necessary to share and discuss this theme, because we all want to educate the best teachers.

References
177 – Mind Map Our Way into Effective Student Questioning: A Principle Based Scenario

Harry Stokhof, Bregje De Vries, HAN University of Applied Sciences, the Netherlands, Theo Bastiaens, Rob Martens, Open University, the Netherlands

RDC: Primary and Pre-primary education
Subtheme: Innovation

Mind mapping / student questioning / teacher guidance

Abstract
Asking questions is a powerful heuristic for students to acquire knowledge about the world (Chouinard, Harris, & Maratsos, 2007). Student questioning, defined as the process in which students generate, formulate and answer questions to seek knowledge or to resolve cognitive conflicts, seems to have multiple benefits for teaching and learning (Biddulph, 1989; Van der Meij, 1994). Research shows that student questioning is an important self-regulative strategy, which enhances intrinsic motivation, fosters feelings of competence and autonomy, and supports both knowledge construction and the development of metacognitive strategies (Chin & Osborne, 2008). Unfortunately, teachers dominate questioning and student questions seem to be rare in classrooms (Dillon, 1988; Reinsvold & Cochran, 2012). Although many teachers acknowledge the importance of student questioning, its implementation seems limited for several reasons. A major obstacle seems to be that teachers feel the pressure ‘to cover the curriculum’, the curriculum being a set of predetermined learning goals established by National Standards, school system, syllabi and/or teacher (Wells, 2001). Rop (2002) shows that teachers prefer direct instruction in order to attain curriculum goals, and sometimes discourage spontaneous student questioning to prevent disruption of planned lessons. By contrast, Zeegers (2002) finds that to foster student questioning, teachers would have to allow students the opportunity to pursue questions of personal interest. These self-formulated student questions, however, might not necessarily address curriculum goals which in turn worries teachers. Next to the need to attain curricular goals, teachers encounter two major practical challenges: a) to organize quality guidance for a wide variety of questions and b) to facilitate exchange of learning outcomes to prevent fragmented knowledge construction amongst students (Keys, 1998).

To address these challenges a three-year design-based research was set up to design, implement and evaluate a prototype of a scenario that supports teachers in guiding effective student questioning, defined as the degree in which student questions contribute to attaining curriculum goals. To design the scenario a review study was conducted to identify design principles that support teacher guidance of effective student questioning (Stokhof, De Vries, Bastiaens, & Martens, 2016a). Three general design principles emerge from the literature: (a) define conceptual focus in a core curriculum (b) establish a sense of shared responsibility to collectively cover the core curriculum, and (c) visualize the progressive inquiry. Based on these design principles a scenario was developed using mind mapping as visual tools to support teacher guidance of student questioning and collaborative knowledge construction.

The prototype of the scenario was implemented, evaluated and redesigned in three consecutive years in two primary schools in the Netherlands. Data were collected for each iteration to study if the scenario addressed the key issues of guiding student questioning as reported and experienced by...
teachers in the past (relevance), if the scenario was do-able in time and given circumstances, and easy to use (practicality), and if use of the scenario lead to effective questioning behavior of the students and effective support of that behavior by the teachers (effectiveness, cf. Nieveen, 2009). The three iterations resulted in a relevant, feasible and effective scenario in which mind mapping supports teachers in guiding effective student questioning (Stokhof, De Vries, Bastiaens, & Martens, 2016b).

In this interactive workshop, participants will be guided through the phases of the scenario, experiencing both teacher and student perspective in activating and structuring prior knowledge, prompting and formulating questions and sharing and building collective knowledge about a topic from the social science curriculum. Classroom examples both from primary and higher education will illustrate each phase as well as practical tips and advice in implementing the scenario.

References
100 – Dutch professional Standard of Teacher Educators and the binding force of voluntary professional registration, a shared responsibility

Joke Kiewiet-Kester, Edmée Suasso de Lima de Prado, VELON, the Netherlands

RDC: Professional Development of Teacher Educators
Subtheme: Professional roles of teacher educators

Professional development / professional dialog / registration

Abstract
In 2002 the Dutch association for Teacher Educators, VELON, launched the professional registration for teacher educators. This registration is based on the Professional Standard of Teacher Educators (PSoTE, see figure). In April 2014, VELON started the project ‘Advanced Development Professional Registration Teacher Educators’ to effuse the registration nationwide. Registration is not considered a goal in itself, but a means to encourage and further support the professional development of teacher educators. In this workshop we will introduce the participants in the Dutch context. We will discuss the PSoTE and give insight in the development and implementation of the registration procedure. The participants will experience the use of the PSoTE regarding their own activities and discuss the desirability, possibilities and barriers of professional registration in their own working context. Together, we consider and discuss the shared responsibility concerning the quality of teacher educators.

Theoretical background, importance and relation to current development in teacher education
*There is a growing interest in the professional development of teacher educators as the demands, expectations, and requirements of teacher education are increasingly and critically examined and discussed. In this respect, the manner in which teacher educators learn to transfer their world of work into the development of their knowledge, skills, and ability is important (Loughran, 2014).
*The professional development of teacher educators also depends on their professional identity (Swennen, Jones & Volman, 2010) and on the roles they fulfil in actual practice of teacher education (Lunenberg, Dengerink & Korthagen, 2014).
*The PSoTE (Melief, Van Rijswijk & Tigchelaar, 2012; Koster & Dengerink, 2008), is based on theory and research on teacher education and professional development, and applied through development and evaluation in the field of teacher education in The Netherlands.
*From the report ‘Shaping career-long perspectives on teaching’ (European Commission, 2015) we relate most to key principle 6: The professionalism of teachers, teacher educators and leaders in education should incorporate collaborative practices, and a collaborative culture. Both should therefore be promoted in the content and process of ITE. Leadership of collaborative practices should be given particular attention.
*In the Netherlands the importance of teacher quality and teacher educator quality is highly valued by the Ministry of Education. Registration is one of their main topics to explore.

Programme of the workshop
The workshop is divided in four parts. In each part, information will be shared and discussed. We use different methods to address the issues and to stimulate the discussion between the participants. The parts are:- Setting: the Dutch context concerning teacher education;- Base: the Dutch Professional Standard of Teacher Educators- Method: voluntary professional registration- Message: professional development and a shared responsibility.
Participants
Teacher Educators, Managers and Coordinators, Policy makers. We expect them to be interested in addressing and stimulating the quality of teacher educators through registration and professional development and to be willing to take an active role in the workshop.

Learning gains for the participants
After the workshop, participants have
- Insight in and opinion about the usability of the PSfTE and professional registration regarding the quality of teacher educators in the own working context;
- Insight in and opinion about sharing responsibilities in professional development of teacher educators and about the theme and the importance of a voluntarily approach.

Relevance to theme, subtheme and RDC
The workshop makes a thorough fit with the theme, subtheme and the RDC mentioned above: To educate the best teachers, we have adopted the challenge to make a contribution to the quality of teacher educators (theme) by explicating their professional roles (subtheme 2) and stimulating their professional development (RDC).
References
The theme and objectives of the professional standard is initiated and supported by:
The Dutch Association for Teacher Educators, which launched the professional standard of teacher educators in 2002. See: Melief, K., M. van Rijswijk, A.Tigchelaar (2012), Professional Standard for Teacher Educators. VELON.
The Dutch Ministry of Education explicitly refers to the professional registration of teacher educators in the so called ‘Lerarenagenda': http://www.delerarenagenda.nl/wp-content/uploads/2013/10/lerarenagenda_v02.pdf
The Dutch association for ‘Higher Vocational Education' has adopted the professional registration as mentioned in the program 'Teacher Education' (p.16):
35 – Problematising practicum arrangements. Sharing experiences from different traditions and contexts

Doreen Rorrison, Charles Sturt/Adelaide Universities, Australia, Matts Mattsson, Stockholm University, Sweden, Paul Hennissen, Zuyd University of Applied Sciences, the Netherlands, Sirkku Männikkö-Barbutiu, Stockholm University, Sweden, Philip Bonanno, University of Malta, Malta

RDC: Professional Development of Teacher Educators
Subtheme: School-based teacher education
Practicum arrangements / practicum frameworks / practicum models

Abstract
Within this active workshop four arrangements of practicum in four different countries are presented, discussed and problematised. Based on the conclusions drawn in the volume A Practicum Turn in Teacher Education (Mattsson, Eilertsen, & Rorrison, 2011), the four ‘arrangements’ are situated within current and emerging theories and frameworks related to professional experience and practicum. Within this workshop delegates are invited to present their own experiences concerning practicum arrangements or models, through a range of interactive activities, then situate them within the emerging theories and concepts.

In the volume ‘A Practicum Turn in Teacher Education’ (2011) the concept of a renewed interest in practice knowledge and frameworks for organizing practicum underpins each empirically based chapter. A major contribution of the volume is a list of practicum ‘models’ that emerges and is theorised as ways of describing how practicum learning might be organised (Chapter 12). As our international collaboration has developed and our discussions have widened we remain committed to developing a deeper understanding of practicum arrangements both within our local contexts and with a wider lens. We are observing that in each situation practicum arrangements are developed incorporating several models and consequently we are now suggesting that we might move from a descriptive view based on ‘models’ to a process-oriented view based on ‘arrangements’. We see this as a natural evolution, as what is actually happening in different contexts is that those responsible for professional learning are creating their own arrangements to meet the needs or constraints of their context.

The program of our workshop will begin with a 5-minute introduction followed by presentation of four different arrangements, traditions or models of practicum by members of the International Network of Practicum Research and Development, representing four countries; emergent partnerships and technology (Malta), learning through narratives (Australia, Rorrison (2008)), combining theory and practice in a curriculum (Nederland), and the content of mentoring dialogues within practicum (Sweden) (20 minutes).

Following this a discussion of the presented arrangements will be convened using creative interaction (e.g. place-mat method, value lines and report back models) depending on group dynamics and consensus. Participants will be asked to respond to the shift or new ‘turn’ and present their own stories of how practicum arrangements and contextual innovations have evolved from the key elements of the conceptual models (35 minutes). It is anticipated that an ‘elevator-pitch’ will follow, during which every delegate summarises the key elements to a peer from another group (10 minutes). After this delegates will align with one of the presented arrangements. At each location the original presenter will record the experiences of the delegates on a large sheet or whiteboard (10 minutes).
These presenters will lead the plenary summary session with the whole group. Delegates who want to join further research/critique will be invited to collaborate with the International Network of Practicum Research and Development (10 minutes).

The workshop is interesting for all teacher educators who are interested in sharing and problematising their practice and processes related to professional experience and practicum. By sharing what works and what kind of arrangements there are in the practicum learning, participants can develop their understandings of their own emergent arrangement. Through moving from a descriptive to a process-oriented and evolving view of practicum, delegates will be in a position to build new theories to share and critique and take back to their workplace. In this way the workshop relates directly to ATEE conference theme three, ‘school-based teacher education’, by providing emerging theories to widen and deepen learning during professional experience.

References
High quality differentiated instruction - a checklist for teacher professional development on handling differences in the general education classroom

Wouter Smets, Karel de Grote Hogeschool, Belgium

RDC: Professional Development of Teachers
Subtheme: Innovation

Differentiated instruction / teacher professional development

Abstract
This paper presents the results of a review study on the concept of differentiated instruction. It discusses the way the concept of differentiated instruction may be applied effectively by presenting a checklist for high-quality differentiated instruction (DI). The concept of DI has been developed in order to handle differences in learning status, interests and learning profiles within a classroom (C. Coubergs, Struyven, Gheyssens, & Engels, 2013; C. Tomlinson, 2000; C. Tomlinson, 2001). Differentiated instruction may be described as a comprehensive concept including a variety of teaching approaches. Both Tomlinson (2000) and Coubergs and Struyven (2015) have defined the concept by proposing a model for DI. The comprehensive character of differentiated instruction makes it sensitive to critique as it is rather difficult to state whether DI is an effective classroom practice. Research on effectivity of DI focusses on elements of the construct rather than on the construct as a whole (Firmender, Reis, & Sweeney, 2013; Riviou & Kouroupetroglou, 2014; Smit & Humpert, 2012).

We tried to tackle the question of how to implement differentiated instruction in a research-informed way. We have sought answers in meta-analyses on effective teaching practices, by using the work of Hattie (Hattie, 2009, 2012), Marzano (Beesley & Apthorp, 2010; Marzano, 1998) and Muijs and Reynolds (Muijs & Reynolds, 2011). In their work they make various references to elements that constitute a defining part of the construct of differentiated instruction. To investigate accordance between this literature and both models for DI, we have operationalized all elements in these models. We then scrutinized whether the operational elements in these models are characterized by the afore mentioned authors on teaching effectivity as effective teaching practices. The result is an evidence-informed checklist (Scriven, 2005) that helps teachers applying the concept of DI in their practice.

The need for this evidence informed checklist is clear as many practices exist of teachers implementing differentiated instruction in a selective or simply ineffective way. Some authors describe differentiated instruction as merely an attitude (Van Aevermaet & Sierens, 2011). Our study clearly indicates that DI also requires a repertoire teaching methods. Other authors such as Wijnia, Hulsebos, and Hummel (2010) propose differentiated instruction practices that cannot be supported by evidence. This checklist may help teachers to assess their own teaching practice. It deserves a role in teacher professional development programs. It is not designed as a definitive set of criteria that every kind of differentiated instruction must meet, rather it is a tool to discuss high quality evidence-informed teaching practices that aim at making teaching in diverse classrooms more accessible. It may therefore also be applied by preservice teachers and teacher educators as a tool to discuss the practicum experiences.
We would like to present the checklist for high quality DI on the ATEE conference in an interactive way by proposing a workshop with examples of DI to the public. We will let the attendants discuss in small groups whether they regard the proposed approaches as high-quality DI. After this moment of unstructured discussion we scaffold the discussion by presenting the checklist and ask the attendants to write down suggestions to improve the presented examples based of the checklist criteria. To summarize the discussion we present our own estimate of the approaches and we formulate our own suggestions for improvement. At the end of the session we present video-messages of teachers who have worked with the checklist and discuss its practical use.

This workshop aligns with theme of innovation. The checklist presents a tool for high-quality DI for teachers, teacher educators and preservice teachers that want to innovate their own teaching in a thoughtful evidence-informed way.
**210 – Voicing in collaboration: a challenge for innovative teachers**

*Jacqueline van Swet, Karin Diemel, Ellen van Meurs, Marianne den Otter, Frans Smulders, Anja van Zon, Harrie van den Brand, Chris Pols, Fontys University of Applied Sciences, the Netherlands, Naorah Lockhart, Binghamton University, United States of America*

RDC: Professional Development of Teachers  
Subtheme: Innovation

**Abstract**

The Lectoraat, Teachers in Collaboration, is located in Fontys, Department Special and Inclusive Education, that offers master programmes Special Educational Needs (M SEN). The Lectoraat aims to develop knowledge about collaboration of teachers with colleagues and others within the schools and in the school environment in order to contribute to the students' development opportunities which can be implemented into the curriculum. Since its start end of 2013 the Lectoraat has explored the theme of collaboration, for example by:

- Two on-line surveys (2014 and 2015) amongst the students who are all working in education asking them about their experiences around collaborating in their practice and in the Master SEN. These surveys have been followed by focus groups.
- Experimenting with teaching strategies around the theme of networking and collaboration during lessons in the M SEN.
- Mapping the networks of the students M SEN and analyzing these using Social Network Analysis.
- Workouts where the theme of collaboration was explored with professionals from a variety of disciplines and with parents.

These activities have yielded interesting results, which have already led to implementations into the curriculum. This process is still ongoing. In the workshop results will be presented, good practices and experiences will be shared and discussed.

For this workshop we have chosen to focus on collaboration between (vocational)schools and the workplace where students go for traineeships and for future jobs. We focus on the role, position and contribution of teachers in that collaboration, because of the context of our research: the M SEN where students are teachers in a broad range of roles and tasks: subject teachers, mentors, remedial teachers, supervisors, managers etc. In this process teachers have a key role and they collaborate with many stakeholders: the students, the students' parents, people at the workplace (managers, mentors etc), colleagues in the schools, medical doctors, social workers etc. However, it is still unclear what mechanisms are involved, what exactly the role of teachers is and how they could fulfill their role best.

Collaboration in a field like this is complex (Sennett, 2012) with many challenges, questions and dilemma's for the teachers involved. To mention some of these: Who should participate in the collaboration and who should have contact with whom? What is the specific expertise of the teacher, what expertise do other stakeholders have? How can the teacher position him or herself and in what way should he or she take the lead? How can he or she make sure that all voices, and especially those of the students, are heard? What role could the teacher choose: that of a mentor, supervisor, mediator or broker, a liaison between student (parents) and workplace? Is the teacher aware of the
problems that may arise because each stakeholder in the collaboration has his or her own culture and language and that each has his or her expectations of the collaboration and of the aims of the collaboration (van Swet 2014).

Most teachers (and parents as well) think that they are representatives of their students, but research has shown that that is not self-evident. For example Pols (2015) has done research on learners with learning disabilities in the transition from school to work. He found that the perspectives of the learners, their parents and the teachers differed widely. He also found that group sessions with the learners helped them to express their voices.

In this workshop we would like to have a dialogue about our perspectives, the decisions we have taken, the perspectives and methods we are using, and the results we have found until now.

**References**
www.fontysoso.nl/leerkrachtinsamenwerken
118 – Three innovative tools to foster adaptive teaching expertise

Fred Janssen, Leiden University, the Netherlands, Hanna Westbroek, VU University Amsterdam, the Netherlands, Michiel Dam, University of Amsterdam, the Netherlands

RDC: Secondary Teacher Education
Subtheme: Innovation

Adaptive expertise / teacher education

Abstract
Adaptive expertise has often been described as the 'gold standard' of the development of the teaching professional (Darling-Hammond & Bransford, 2007). Adaptive experts not only have developed effective teaching routines but are able to respond innovatively to students’ varying capacities and interests, to changing teaching contexts, approaches and content. Developing adaptive expertise requires a balance between the development of routines and innovation. Such a balance prevents a one-sided focus on the development of routines leading to boredom and a one sided focus on innovation leading to frustration and loss of control. It implies that teachers develop their teacher repertoire in small steps, building on their already present routines (Janssen et al., 2013). The question for teacher educators is how to establish this kind of learning progression in teacher education.

In this workshop we introduce three (related) innovative tools for promoting adaptive teaching expertise during teacher education:

- **Goal system tool** provides a window into what a student teacher does and why s/he does it this way (Janssen et al, 2013). This tool is based on goal system theory that emphasize that person's actions in complex situation are often guided by multiple goals simultaneously organized in a goal-mean hierarchy.

- **Lesson building block tool** enables student teachers to stepwise innovate their teaching repertoire by recombination of existing lesson building blocks. This tool is grounded in theories of modular innovation. Modular innovation is a very cost-effective way to generate an enormous diversity of innovations based on only a limited set of building blocks and rules recombining them (think for instance about our Roman and genetic alphabet) (Janssen, Grossman & Westbroek, 2015).

- **Learning from success tool** supports student teachers to productively learn from and build on their positive teaching experiences. In contrast to common practice in teacher education where student teachers are usually stimulated to reflect on problematic experiences we emphasize the importance of learning from successful experiences (Janssen et al, 2008). For in a successful experience, something happened that a student teacher wants and is already able to do, and by focussing on this, they do not only discover what they really think is important, but also, discover essential ingredients they can use to attain their goals.

In the workshop we will first introduce and illustrate the three tools. Subsequently, participants can choose from three teacher education contexts listed below. These workshops focus on providing participants with hands-on experiences with the tools to develop adaptive teaching expertise.

How to design and enact group meetings in which student teachers expand their repertoire in a way that is adapted to their needs and builds on their strengths (Michiel Dam).

How to support student teachers to design their own learning pathway in which they stepwise develop their teaching repertoire (Fred Janssen).

How to support student teachers with designing their teacher research in a way that meets their needs and builds on their strengths (Hanna Westbroek).
References
69 – #Gameon: A workshop on gamification in teacher education
Ankie van de Broek, Zuyd University of Applied Sciences, the Netherlands, Henderijn Heldens, Fontys University of Applied Sciences, the Netherlands

RDC: Teacher Education and Digital Technology
Subtheme: Innovation

Gamification / teacher education

Abstract
Gamification is the use of game design elements and game mechanics in non-game contexts. This idea has been successfully used in many web-based businesses to increase user engagement. Some researchers suggest that it could also be used in education as a way to increase student motivation and engagement. In an attempt to verify those theories, we have redesigned an existing course on ‘social context of education’ as part of the Master Leren en Innoveren (master track for teachers on Learning and Innovation in education). We used the Mission Start Model as a set of design principals and applied those principles to the original design of the course. We experimented in the master track and evaluated students’ and teachers’ experiences in a focus group interview. The workshop aims to orientate on the Mission Start Model, and its design principles, and to discuss teacher and student experiences as a first step in gamification in education. Some game elements are used in the workshop but no prior experience is required, just BYO device.

Background
Gamification refers to the application of game elements in non-game environments aimed at engaging people, motivating action, enhancing learning and solving problems (Hamara, Koivisto and Sarsi, 2014; Deterding 2012). Previous studies have shown that gamification can have a great emotional and social impact on students, as reward systems and competitive social mechanisms seem to be motivating (Domínguez et al., 2013). These studies identify seven different objectives for gamification in general: (i) Mastering skills: improving certain abilities of the students; (ii) Challenging: proposing challenges that give extra meaning to the learning process; (iii) Engagement: engaging students in learning activities that are more interesting and easier to follow; (iv) Improving learning: maximizing the acquisition of knowledge; (v) Behavioural change: fostering changes of behaviour by rewarding adequate actions and penalizing unsatisfactory ones; (vi) Socialization: allowing for both socialization mechanisms and group learning; and (vii) Guidelines: discussing the benefits of gamification as a means to motivate students and deal with some of the learning process problems (Hamari, Koivisto & Sarsa, 2014). In education, gamification recently is used as way to motivate students (Domínguez et al., 2013). In 2015 an experiment, using Gamification as a main design principle, was carried out in the Master Leren en Innoveren. The experiment involved redesigning an entire (offline) course in the second year of the master program. To avoid technical problems being a bottleneck for the success of the experiment, the learning environment was not altered into an online learning environment. Instead we chose for more hands-on solutions resulting in a mix of offline and online game elements in a hybrid environment (Kapp, 2012). The redesign of the course was guided by the Mission Start Model (MSM), a model for educational design initially developed for primary education (Van Geffen, 2014). The MSM is based on existing Instructional Design models (Morrison, Ross, Kalman & Kamp, 2013; Molenda, 2003). The MSM focuses on analysing and designing gamification in education in offline, online or hybrid learning environments (Van Geffen, 2014).
The workshop addresses teacher experiences while using the model for redesigning the course. The use of the model in teacher education practice will be reviewed. Students’ and teachers’ evaluations of the experiment will be shared and discussed in relation to the objectives of gamification. Several online and offline tools that were used for reaching gamification objectives during the experiment will be presented and used by the participants as an example of we applied gamification. From the participants we expect an open mind towards gamification, basic digital skills (for using simple online game environments) and bring your own digital device.

References
Coaching pre-service teachers with a Bug-In-Ear (BIE) APP

Frank Crasborn, Maurice Smeets, Anje Ros, Fontys University of Applied Sciences, Karel Kreijns, Kamakshi Rajagopal, Open University of the Netherlands, the Netherlands

RDC: Teacher Education and Digital Technology
Subtheme: School-based teacher education

Electronic ear device / mentoring / synchronous coaching

Abstract

Coaching pre-service teachers with a Bug-In-Ear (BIE) APP

During internships, pre-service teachers normally get feedback after the lesson (asynchronous coaching). To shape teacher behaviour in a more direct manner, feedback during the lesson (synchronous coaching) can be helpful (Giebelhaus & Cruz, 1994).

Coaching with a Bug-In-Ear (BIE) device is the wireless transmission of short feedback messages (keywords) to the teacher. Hooreman (2008) has shown that BIE coaching is appropriate for classroom management, activating instruction, and the pedagogical relationship between teacher and learner. Research findings (Hooreman, 2008; Scheeler et al., 2004) suggest improvement of the teachers’ teaching behaviours regarding three competence area’s: classroom management, activating instruction, and the pedagogical relationship between teacher and learner. Research showed synchronous coaching to be effective for three reasons:

1. pre-service teachers immediately can change their behaviour. There is no need to wait for the next lesson to demonstrate the improved behaviour - if remembered (O’Reilly, Renzaglia, & Lee, 1994);
2. the messages are oriented towards the development of specific pedagogical behaviour - not everything. As a result, the post-conferences after the lessons are typically shorter (Sleutjes et al., 2008);
3. pre-service teachers feel being supported during their teaching and showed increased development in the preferred directions (Coninx, 2014).

An APP was constructed to make the use of a BIE-device more viable. Coaches can, while they are present in the classroom, send short messages by ticking a keyword using an i-pad. Pre-service teachers hear the keywords by a voiceover. Adopting and implementing coaching with the BIE APP in coaching practices, may broaden the repertoire of coaches and consequently improve the learning of the students.

Ten mentor-preservice teacher pairs tested the use of the BIE APP in authentic coaching situations in the classroom. Their experiences were monitored, using questionnaires and interviews. Although there were some technical problems, mentor teachers and pre-service teachers experienced an added value to the coaching process. Adopting and implementing coaching with a BIE APP in coaching practices, seems to broaden the coaching repertoire of mentor teachers and consequently improve the learning of the pre-service teacher.

The learning gain of the workshop for the participants is that they experience en discuss synchronous coaching with a BIE device and an app as an operative alternative for traditional formats of asynchronous coaching of teachers. Participants get the opportunity to experience this type of coaching themselves and are encouraged to discuss and reflect on the pros and cons of this type of coaching in their own practice.
The workshop is interesting for cooperative teachers, mentor teachers, teacher educators, pre-service teachers, school leaders, and researchers. No specific background for attending the workshop is expected. If possible, participants should bring a mobile device.

The programme of the workshop contains
1. Introduction (5)
2. Starting exercise in groups (5)
3. Background to the Ear-App project (10)
4. Instruction of the Ear-app (15)
5. Experiencing Ear-App coaching in groups (25)
6. Sharing experiences (10)
7. Research results (5)
8. Final discussion (15)

References
129 – Opinions of Teachers on Innovativeness and Innovative Generations

Ceyhun Kavrayici, Esmahan Agaoglu, Anadolu University, Turkey

RDC: Educational Leadership and Management
Subtheme: Innovation

Teachers / innovation / Turkey

Abstract
The main purpose of the education for individuals and society is to adopt the people that they are part of the society in which they live and according to their age requirements to transfer knowledge and skills to adopt to new challenges for individuals. In order to achieve such a purpose first, individuals must be grown as people who can adapt to the developments occurring in the world and society and who having the necessary equipment to use their knowledge and skills usefully (Dilaver, 1996). Individual innovation refers to individuals' taking risks against to new, adaptability, acceptance, tolerance, and openness to new experiences. (Demiraslan and Usluel, 2008). Innovative teachers are teachers who can improve themselves in their field and increase the number of the activities which students can participate, try new approaches in the presentation of information, apply different methods to increase students' participating and apply new skills by changing habits (Ritchart, 2004). So, efforts of teachers on innovation and training innovative students are vitally important for sustainable development of nations. Therefore, the aim of this study is questioning about the features of innovative teachers. To do so, a qualitative research has been developed to get the opinions of teachers innovation and needs of the future.
In terms of the aim, the questions below are in the focus of the research:
What are the features of innovative teachers?
How can a teacher inspire and stimulate students for the needs of the future?
How should teachers develop themselves in order to meet requirements of next generation and 21st century?
In the study qualitative research method was used. The data was gathered through interview with 10 teachers selected from Eskisehir province. The participants of the study are 10 teachers from different branches. The interview form was conducted after expert view was taken. The data was analyzed through content analysis technique. After the analysis of the data, a new coding key was created by two experts. Third expert checked the codes to verify the reliability of the study and the reliability was calculated as %84. Although the data is in the process of analyze, the preliminary findings focus on educational reform and putting technological development in to practice at State level.

References
178 – Challenging Schools Leadership: Experiential-based Entrepreneurial Programme

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RDC: Educational Leadership and Management
Subtheme: Innovation

Education system / entrepreneurial schools / experiential learning

Abstract

Aim & Research Question
Is an entrepreneurial school, where the majority of content is based on experiential learning viable in a regular school environment? And what is the support needed (training, resources, scaling and mainstreaming) for school administrators and teachers to make the entrepreneurial school a reality?

Introduction

A challenge-based model of an entrepreneurial school should be able to fulfil the compromise between two constraints that are theoretically opposite:
- The integration of the economic and social partners that world normally be outside of the school through a close collaboration with local and international companies;
- The maintaining of the actual school learning outcomes (to be defined or redefined at different levels) in order to guarantee quality and that students receive the similar base of education as well as would in a regular school structure.

Most projects in entrepreneurship education in Europe focus on the use of external speaker in the classes or put the onus on teachers alone. The use of both allows for a stronger connection to the real world outside the classroom for the student and their professional future.

The main focus of the entrepreneurial school needs to be based on helping the students realize their desires and aspirations. For a new way of organizing schools to become a popular and accepted, it has to incorporate new forms of teacher training that fulfil society’s requirements in a modern school system. Different criteria therefore has to be taken into account in this research:
- Omni-connected class room principle: Strong use and training for the use of ICT tools at every level
- Different experiences to make the right choice principle: Experiential learning challenges that can be applied in different areas (sciences, maths, languages, history, economics, etc.) which needs to be developed in collaboration with stakeholders in industry and society (private, associative and public).
- This needs to be tested in different country-contexts to get full acceptance within schools.
- Idea communication principle: Language development must play a major role in the development of the program and students ability to communicate. Thus, each challenge needs a language component, either oral or written.

Main points to be discussed
Organization of the design and implementation consortium (experts in education, expert from the ‘real’ world, ministries, headmasters, teachers etc.) that developed the challenges designed the implementation process and trained teachers: Which actors should be integrated in the design of the process, at what time, and with which roles?
Definition of the main objectives of headmasters and teacher training: What is needed in terms of organizational tools for school directors and/or project coordinators at the school level? Which teachers should be trained? Should it be a ‘national’ training or a school-based training? How should
training for headmasters, teachers and other school staff be conducted in order to reinforce the collaboration and adherence to the program?

Link between primary, secondary and higher education: How can links be created throughout the whole educational system?

Certification of entrepreneurial schools: Would a European certification be something headmasters and politicians desire in order to guarantee quality standards? Would it also be helpful in terms of marketing and communication?

**Conclusion**

Becoming an entrepreneurial school is part of the movement towards innovative learning environments, further developing the education system as a whole and educating the best teachers.
Improving quality of education in the kingdom of Saudi Arabia
Hanan Alsaleh, Margery McMahon, Mary Wingrave, Glasgow University, United Kingdom

RDC: Educational Leadership and Management
Subtheme: School-based teacher education

Saudi Arabia / education system / science education / Total Quality Management

Abstract
The quality of the education is very critical for the social, political and economic growth of a country. The international treaties and conferences of United Nations Education and Scientific Organisation (UNESCO) have emphasized the need of the quality education for the socio-economic development of the developing countries [1]. The definition of quality in educational context is debated by the various scholars, and there is consensus with the definition provided by the UNESCO which defines the quality in education is related to the role of education in building the moral and socio-cultural values, economic strengths and the social status [2, 3]. Merely filling schools with students without paying the due attention to the quality of learning can fulfil the quantitative objectives but not the qualitative ones [4]. Unfortunately only the quantitative aspects of the education have drawn the attention of governments and educational policy makers in the developing countries. The extent to which the educational system achieves the objective of cognitive development is an indicator of the quality of education [5]. However, there is not a sufficient research in this field of improving education quality in the developing countries, whereby the achievement of education quality has merely become a wild goose chase.

In Saudi Arabia, the quality of education is widely debated by academicians, scholars and policy makers in the circle of government authorities. Though the Directorate of Quality has been established as a separate wing of Saudi Ministry of Education for improvement of educational quality in higher education institutions (HEIs), but the job market of Saudi Arabia is still dependent on the foreign workers [6, 7, 8]. The question of quality of learning has still question mark. The governmental education institutions focus on providing the education to the nationals quantitatively but without considering the quality of learning [8].

Accumulating evidence suggest the application of Total Quality Management (TQM) tools in HEIs of the developed countries like the USA, the UK, Canada, etc showed a great promise for HEIs to improve the education quality [9]. TQM principles not only involve all the available resources including material and manpower, but it also incorporates the Kaizen and continuous improvements approaches to implement and sustain the quality of education [7]. None of the research endeavours showed feasibility of application of TQM tools to improve the educational quality in Saudi Arabia. Accordingly, the research aims to improve the educational quality of engineering education by implementing the TQM framework. The objectives of the research involve (1) the surveying of literature concerning the TQM and its implementation in educational settings in various developed countries, (2) examining the feasibility of the TQM principles in the educational settings of Saudi Arabia considering a particular socio-cultural setup; 3) designing the TQM framework for implementation in Saudi HEIs for the improvement of the educational quality. The methods of this research will include the use of mixed method involving the qualitative and quantitative research methods. Semi-structured and open-ended interviews with experts from the Ministry of Education, Directorate of Quality and academic institutions will be used a data collection tools. In the final stage,
the semi-structure interview will be conducted with experts concerning the issues about implementation of TQM framework. The findings will be presented to show the potential of TQM framework to improve education quality in the engineering discipline in Saudi HEIs. The results of this study will provide guidance to policy makers to improve the quality of engineering education in particular and science education in general. This research will also add the significant knowledge to the exiting knowledge pertaining to the quality of education in developing countries.

References
195 – Innovative and Collaborative Learning Environments for 21st Century Education

Mireia Montane, Catalonia College of Arts, Spain, Sandra Lund-Diaz, Knowledge Building in Action, United States of America

RDC: Global Education
Subtheme: School-based teacher education

Competencies / ICT / innovation

Abstract
Societies are transitioning from being industrialized and existing in isolation to being globally-entwined and based in knowledge. Welcome to the Knowledge Age, where knowledge and ideas constitute valuable resources and important sources of economic growth. When dialogue around ideas can be supported in learning environments whose members can share knowledge that will benefit all reciprocally, individual ideas can be transformed into action from the collective knowledge accumulation of the group. These are the Collaborative Learning Communities of 21st Century education, business, and government that support sharing ideas, information and work on common issues and shared problems to achieve a common goal. A different kind of education is needed to support collaborative learning communities that prepare students to acquire knowledge and skills they will need for success through the education continuum, and in the workforce later in life.

Teaching and learning should address the drivers of change and reform, including the rapid advances in information and communication technologies, the shift to economies based in knowledge and the emphasis on the skills required to thrive in them. Schools and education systems around the world are having to reconsider their design and approach to teaching and learning, and many international organizations have stepped in to address these issues by proposing standards for competencies to be achieved in learning and teaching. Prime examples include OECD's Innovative Learning Environments Project and UNESCO's Information and Communication Technology (ICT) Competency Framework for Teaching (CFT). These provide a powerful knowledge base for the design of learning and teaching environments for 21st Century education. Methodologies utilized for teaching around topics, also referred to as 'phenomenon learning' have supported a more collaborative approach to education.

These methodologies stem from designs for deep understanding, in particular those that have been at the core of knowledge-building pedagogy for over a decade in preparing children with skills needed to tackle tomorrow's challenges. In knowledge-building classrooms world-wide, pupils work in small groups collaborative learning environments to apply critical thinking skills in researching issues. They engage in problem-solving through the contribution of ideas and theories. In effect, they are achieving deep understanding while mastering 21st Century skills - the 4C's of future education: critical thinking, collaboration, communication and creativity. Knowledge-building pedagogy, technology and methodologies are combined to create a practical model for collaborative learning and prepare teachers with competencies that meet international standards for nurturing innovation, creativity and 21st Century skills in their students. They are at the core of computer-supported collaborative learning that has been highly researched in the form of Knowledge Building. Currently, a multi-nation design research project aims to go beyond 21st century skills to address the needs of a knowledge society, reflecting the work of scientific and research communities utilizing collaborative learning mechanisms and the sharing of ideas toward deep understanding of problems.
Knowledge-building pedagogy was first institutionalized on a system-wide basis in Catalonia, Spain through COMConeixom, translated as a 'common building of knowledge.' Subsequently, the project spread to other countries in the form of the Knowledge Building International Project. Here, the teachers' role is more of a facilitator of learning rather than a transmitter of pre-determined knowledge, with an eye on promoting UNESCO ICT standards for teacher education. With knowledge building, teachers direct student research on issues through an electronic workspace for the collection of notes and multi-media presentations produced by the students. Common topics are selected for student research, such as climate change, water, sustainability, smart cities, etc. When students are partnered with their peers in other countries, the topics studied from a local perspective become global, and relevant to a student’s life.
The use of Scaffolds involves the ability to express ideas and to discuss opinions with a good command of language. Methodological competencies and real inquiry questions that can offer grounds for research, plan work and support the process of gathering information. It is amazing how easily students get involved in the use of Scaffolds. They quickly identify information to be introduced in the Delta Base without giving it a second thought. We have seen how students can manage the use of Scaffolds in just a few sessions.

Knowledge Building International Project Networking

Important benefits include:

- **Shared learning tools**: Knowledge Forum can be used as an adjunct teaching and learning tool in class. The platform provides a world forum for students to discuss, speculate and analyze information about specific issues in the school curriculum, to support collaborative exploration and building of knowledge to further their examination and understanding of topics in conjunction with the subject-based teaching in schools.

- **Support of collaborative learning**: Most KBP activity is project-based where students operate in knowledge-building teams to promote the development of collaborative inquiry abilities. The students work together with hands-on authentic investigations and study of the topic.

- **International cooperation**: Offers a global lens through which students can study different disciplines. Promotes the building of friendships among similarly aged students across the globe and among teachers in similar disciplines.

- **Effective assessment**: Analysis of data measures progress of the classroom and the individual student in learning, as well as the effectiveness of teaching progressions.

We have partnered classrooms of similarly aged students who participate in collaborative learning environments to build knowledge around specific themes. The KBP activities for the 2010-2011 school year will focus on water: rivers and oceans, and can be applied to different disciplines taught in K-12. For example, a history class might discover how water sources influenced the establishment of trade routes; environmental science courses might center around clean water for cities and metropolitan areas; social studies can focus on how human behavior is impacted by the presence or absence of water sources; science education might dive into the influence rivers have on meteorology; the applications are endless.

Our vision is to share local problems on a global platform and open classrooms to an international audience in "co-learn" solutions. We currently have schools on four continents networked to work together on projects. Progress is monitored through the scheduling of videoconferences, designed to serve as a meeting place for partnered classrooms of elementary and secondary school students, as well as teachers and administrators, for exchanging information, building relationships and monitoring progress. It is during our videoconferences that we can get to know each other better and nurture our relationships, share material produced by our students monitor our progress of aligning curriculum with standards, plan activities and schedule meetings. Partners participating in the videoconferences are able to upload presentations, documents, pictures and other visual aids. Videoconferencing also allow KB teachers experienced with the methodology to mentor new teachers wanting to bring KB to their classrooms.
Improving literacy, enhancing language and imparting 21st Century skills

Technology has transformed the ways in which we live, work, play and learn, where access, use and create information very differently from the way they did in previous decades. Students of the 21st Century need new skills to be able to live and work in a technology-influenced, global knowledge society, and education plays a critical and ever-increasing important role in developing these skills.

It is paramount that students master these same skills in order to live and work in a globally-oriented 21st-Century knowledge-based society, and educators are encouraged to adjust their strategies to allow students to develop these skills that will enable them to thrive in today's global and interdependent world. Educational institutions and systems play a critical role in supporting the environments needed to develop these skills in young people, and the focus of our activities lies in forging partnerships that will create knowledge building classrooms. Additionally, we work to promote professional development opportunities in knowledge-building methodology, and assessments for teachers and administrators, and nurture relationships for collaborative learning environments locally and worldwide.

Knowledge building motivates learning to learn, cooperate and collaborate. Proven results of knowledge building and the effectiveness of knowledgeware and virtual platforms show new and distinctive features developing solutions to cope with challenges common in the field of education across several countries. Research shows that students succeed when allowed to pose their own questions, test ideas, explain their theories, and collaborate on solutions. The quality of scientific discourse increases, communication of concepts improves, and skills learned online transfer to off-line activities. Knowledgeware designed and built on the basis of this research, helps classrooms become academic communities whose purpose is to nurture ideas, promote sustained inquiry, and build knowledge. Flexible methodology easily adapts knowledge building to current educational systems, incorporates democratic principles into the process of learning and uses cognitive tools.

With the collaborative partnerships, we are able to form between schools in different countries, other students begin to understand local problems within a global context. They are able to compare notes of the subject matter they are studying with students in other areas and share information to gain insights into similarities and differences of the problems in their communities. These students perform their research with a geographical lens, or a ‘think globally - act locally’ philosophy, as they create solutions to problems facing the communities in which they live.
The Innovative Learning Environments Project of the Organisation for Economic Co-operation and Development promotes what schooling, teaching and most especially learning, look like in our rapidly-changing world to rethink what is taught, how it is taught, and how learning is assessed. The project explored the nature of learning through the perspectives of cognition, emotion and biology, and provided analyses of the implications for different types of application in learning environments. The research was synthesized to create seven cross-cutting "principles" to guide the development of learning environments for the 21st Century:

1. Learners at the Centre
2. The Social Nature of Learning
3. Emotions are Integral to Learning
4. Recognizing Individual Differences
5. Stretching all Students
6. Assessment for Learning
7. Building Horizontal Connections

UNESCO’s Framework emphasizes that teachers need to be able to help their students become collaborative, problem-solving, creative learners through using ICT so they will be effective citizens and productive members of the 21st Century workforce in the Knowledge Age.

The Framework addresses all aspects of a teacher’s work and is arranged in three different approaches to teaching, reflecting the different stages of a teacher’s development:

- **Technology Literacy** enables students to use ICT in order to learn more efficiently.
- **Knowledge Deepening** enables students to acquire in-depth knowledge of their school subjects and apply it to complex, real-world problems.
- **Knowledge Creation** enables students, citizens and the workforce they become, to create the new knowledge required for more harmonious, fulfilling and prosperous societies.

References


OECD Publication, 'Schooling Redesigned Towards Innovative Learning Systems'

www.oecd.org/edu/schooling-redesigned-9789264245914-en.htm
How could Pre-service Teachers Create Their Beliefs as a Teacher: To apply the 'Study of Learning Autobiography (SLA)' method

Mami Kurokawa, Hiroshima University, Japan

Pre-service teachers education / self-study / Study of Learning Autobiography

Abstract

How could Pre-service Teachers Create Their Beliefs as a Teacher: To apply the 'Study of Learning Autobiography (SLA)' method

The purpose of this research is to propose a new methodology, 'Study of Learning Autobiography (SLA)' which enables pre-service teachers to verbalize past educational experience and create beliefs as a teacher.

The research question is as following:
1. What are the objects, the aim and the method of the basis theory of the SLA, 'Study of Teaching Autobiography (STA)'?
2. How to apply the STA theory which has been developed for in-service teachers education, to SLA that focuses on pre-service teachers education?
3. How to implement SLA as a curriculum model?

To answer the research question, this research is constructed by three steps of research methods.
1. Analyze objects, aim and method of STA from the previous studies conducted by Noji.
2. Improve STA by adding the concepts of 'Life History' and 'Self-Study'.
3. Learned from the experiment by the presenter implementing SLA in pre-service teachers education, propose a new model of pre-teacher education that establishes a concrete flowchart.

As a result of analysis, the presenter detected two findings.
1. STA was proposed by Dr. Junya Noji, a researcher of Japanese language arts education, in 1956. STA clarifies the view of teaching and educating by reveal teacher's autobiography like 'Life History' and 'Self-Study'. Compared with those methods using to interview or to discuss with 'others', STA reflects on his/her own past educational experience using 'self-conversation' without 'others'. Therefore, the researcher could write his/her own autobiography in more realistic with no regard to others. Main objects are experienced teachers. Teachers reaffirm his/her beliefs as a teacher by verbalizing and biographing their educational practice through STA.
2. The presenter renewed STA into SLA its points, objects, aim and method. First, SLA's objects are pre-service teachers. Pre-service teachers play the role as a bridge between trainees and teachers, which means this period works as an important start point of his/her beliefs as a teacher. Nevertheless, we seldom look back over the past in Japanese pre-teacher education courses. Accordingly, we should utilize STA in Japanese pre-teacher education courses. And SLA needs a mentor like an escort person. The mentor escorts pre-service teacher to complete his/her SLA. Thus, In this research, SLA's method is the midpoint of 'Life History', 'Self-Study' and STA.
The presenter tried SLA as an example and establishes 6-step process: 1. Deciding of the target date with mentor. 2. Deciding of the items at each the target date with mentor. 3. Collecting the sources and describing 'Learning Autobiography', especially regarding his/her education without mentor. 4. Reflecting 'Learning Autobiography' and analyzing the events aspire him/her to become a teacher. 5. Sharing the result with mentor. It is important that mentor look at only the result. 6. In doing from 1 to 5 processes repetitively if Mentor finds that the pre-service teacher constructs his/her beliefs as a teacher, SLA complete and finish. This process doesn't require much time and is easy to study. The research concludes that pre-service teachers can verbalize their past educational experiences which can cause their belief as a teacher through SLA, and create teacher's beliefs by SLA. And SLA process also may become a start point of important study to be an excellent teacher. At the end of this presentation, the presenter gives following quotations; 'Can the SLA method apply to pre-service teachers education curriculum in Europe?'

References
Using evidenced-informed reflective practice with pre-service teachers to promote continuing professional development

Mealnie Nash, Melbourne Graduate School of Education, Australia

RDC: Secondary Teacher Education
Subtheme: School-based teacher education
Evidenced-informed Feedback / professional development / reflective practice

Abstract

Background/Context
The pre-service teachers (PSTs) participating in the Master of Teaching Initial Teacher Training program, at the Melbourne Graduate School of Education, currently spend 60 days in school-based placement. During this time they regularly receive feedback from their mentor teachers and the university staff (teaching fellows and clinical specialists) observing their classes, and increasingly PSTs are also receiving feedback from their peers. This feedback is guided by mandated professional teaching standards and will be both formal and informal in its delivery. While it is evident that PSTs reflect on this feedback and use it to inform their immediate practice it has been noticed that an important source of feedback is frequently neglected. That is the information and evidence available from the students that they teach. It was therefore my objective, as the Professional Practice Coordinator for the Secondary Program (2013-2015) at MGSE, to find a way to encourage pre-service teachers to draw on a wider range of evidence-informed feedback, which could be critically analysed in order to effectively inform their future practice. To this end I designed an assessment task ‘360-degree feedback review’ shaped on processes conducted in performance management in leadership. This task required the PSTs to gather and analyse ‘multi-source feedback’ (Drew, 2009) from a teaching episode, toward the end of their final school-based placement, and to use this data to suggest a possible course of action for future professional development.

Research goals
My aim was two fold - firstly to investigate how effective pre-service teachers found the ‘360-degree review task’ was in supporting the development and maintenance of their reflective practice. Secondly to determine if the analysis of the collected data helped them to identify an area(s) for improvement as they endeavour to cultivate their professional expertise.

Design and methodological approach
This qualitative case study, guided by a constructivist epistemology (Crotty, 1998, 2005), sought to understand the participants’ experience as they engaged in new reflective practices, during their placement. The research primarily uses data generated from documents, artifacts and interview transcripts, collected during 2014-2015. This poster will report on the thematic analysis of the data collected from the documents and artifacts collected from the pre-service teachers.

Initial Findings
Initial findings indicate that: (1) while pre-service teachers found the use evidence-informed feedback from students such as work samples and assessment tasks relatively easy to collect and analyse, they were initially quite apprehensive about asking students for direct feedback on their teaching; (2) combining multiple feedback data from students, mentor, university staff, peers, and self-reflection gave them a more holistic view of the lesson; (3) simplistic answers to what worked in...
the lesson and what didn’t are rare, as there are so many variables involved in teaching; (4) PSTs acknowledged that you never stop developing as a teacher. This study contributes to a richer understanding of how we might enhance the evidenced-informed reflective practice and professional development needs of pre-service teachers.

**How are we planning to make the session interactive?**
I will invite colleagues to contribute to a discussion of the analysis of the data presented on the poster.
20 – Improving teacher competence of lesson planning by drawing an analogy to scriptwriting: an innovative higher education didactics approach in technical and vocational teacher education

Matthias Soell, University of Kassel, Germany

RDC: Technical and Vocational Teacher Education (TVTE)
Subtheme: Innovation

Analogy between lesson planning and scriptwriting / innovative higher education didactics approach / teacher competence of lesson planning

Abstract

The core issue of the poster is an ongoing research project at the Department of Business and Economics Didactics (University of Kassel) about an innovative higher education didactics approach in technical and vocational teacher education. It aims at the improvement of lesson planning competence of student teachers in university courses.

Lesson planning is a basic competence of professional teachers. That is emphasized by the German Standing Conference of the Ministers of Education and Cultural Affairs (KMK) and the British Department for Education (DfE) in their standards for teacher education (KMK 2014, DfE 2011). Hence, learning how to plan lessons is an important element of student teachers’ professional development.

There is a range of theories and guidelines about lesson planning. In this context, John (2006) and Hopmann (2000) argue that classical didactical models like the ones of Tyler or Klafki often dominate university learning environments. However, some of the few studies on lesson planning show that the analyzed task is not as linear as these models suggest (Zazkis et al. 2009; Mutton et al. 2011). Moreover, many lesson planning models emerge from the field of general didactics, although they are greatly influenced by subject didactics. In the German vocational education and training system, for instance, teachers have to consider vocational action competence as a specific educational objective. Beyond that, lessons are organized as so-called learning fields. In this concept, curricula base on work and business processes rather than subjects (Mulder et al. 2007).

While lesson planning is very important, there is a lack of advanced, subject didactically based, student-centered learning environments and empirical studies on their effects. Against this background, the research project is focused on a suitable approach to improve lesson planning competence.

The innovative idea of the approach at hand is the analogy between lesson planning and scriptwriting. Scriptwriters begin their work with a story in mind. They imagine characters whose interactions lead the story line to its purpose (McKee 1997; Field 2005). Lessons are also characterized by specific aims. Teachers consider them, choose appropriate contents and plan the interactions of pupils. In the developed course, students reflect their lesson planning experiences, elaborate specifics of business and economics didactics models, adopt the described approach and plan lessons in analogy to scriptwriting in small groups.
It is hypothesized in the accompanied research project that this analogy is motivating for the students as they are very interested in scriptwriting. By using the corresponding constructs, they should also adapt a more process-oriented lesson planning model. With the focus on individuals and their interactions, it can be assumed that it is easier for students to incorporate exemplary work and business processes in their lesson plans. Finally, by planning in teams, they should learn how to deal with learning fields. To examine these effects, pre-post vignette tests (Blömeke et al. 2008) supplement general evaluation tools like portfolios and questionnaires.

The course began in winter term 2015/2016 with 27 student teachers in the degree program business and economics education. First analyses of the collected data indicate that the assumed effects actually occur. In winter term 2016/2017, the optimized didactics approach is becoming part of the school-based teacher education course of the addressed degree program. A parallel test research setting will complete the evaluation.

During the interactive poster presentation, the project can be improved by discussing different lesson planning approaches with the participants. Furthermore, the credibility of the analogy as an indicator for its face validity is an interesting point to debate. In conclusion, the research project has the potential to improve theory and practice of lesson planning and to support innovation in teacher education.

References
Designing of the unit plans using the Bloom's Taxonomy in physical education

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RDC: Health, Environmental and Sustainability Education
Subtheme: School-based teacher education

Physical education / thinking ability

Abstract
In global, 'key competencies' is considered important ability, and it is including 'Thinking ability'(OECD, 2005). Based on that, a new scholastic ability model has been shown recently in Japan. This is named 'a scholastic ability in the 21st century'. Among all the skills to be cultivated under its name, 'thinking ability' has been nominated as being the most important (Takaguchi, 2015). Similarly, 'critical thinking' is considered important things in Physical Education (Borhannudin et al, 2014; jeffrey, 1997). In this paper, 'thinking ability' means including 'critical thinking' and 'logical thinking'. However, there has been only a limited number of studies that explored 'thinking ability' in physical education field in the context of Japan. Moreover, the assessment of 'thinking ability' among the students is also underexplored (e.g., Kihara, 2014). Therefore, it is necessary to formulate lesson designs in order to cultivate 'thinking ability'. However, only a small number of proposals for the development of classes to foster 'thinking ability' in physical education has been offered thus far. In other countries, Bloom's Taxonomy has been developed as a method for evaluating the knowledge, Understanding, and 'thinking ability'. Nevertheless, this theory is not much used in Japan. In this study, by using the theory of Bloom's Taxonomy, it proposes a unit plan for developing 'thinking ability' among students step by step. This study verified the development of 'thinking ability' in the physical education field using the Bloom's Taxonomy in the unit plans.

The purpose of this study is to answer the following two questions: (a) How 'thinking ability' be developed in the physical education class with the Bloom's Taxonomy being used? and (b) What proposals regarding effective unit plans can be created to improve 'thinking'? In addition, in order to reduce the difference in recognizing the realities of teaching goals between students and teacher, this study additionally pays attention to the reflection and teaching improvement of teachers.

The author has conducted research using the following methods and data. This case study was carried out employing data collected from a junior high school. The author designed unit plans as a practitioner, and conducted classes according to them. Participants were conducted by 40 students. This study was conducted from July 2 through August 5, 2015. In addition, the planning of the unit plans was triangulated by three people, including the author himself in order to enhance the internal validity.

The results can be summarized in two points: (a) the physical education class following the unit plan using the Bloom Taxonomy cultivated 'thinking ability' among the students; (b) notable difference was observed between the level of teachers' expectations and that of students' achievements. On the basis of the results, the study also points out the importance of the reflection ability among teachers. The improvement of thinking is believed to be important from the following two...
perspectives: (a) to understand the actual situation of students, and (b) to improve self-recognition knowledge of self-teaching among teachers. The researcher believe it is important to improve 'thinking ability' for student and PE teacher’s teaching skills to the across the countries. Because the author hopes to share how the 'thinking ability' to improve in other countries. Summary, the researcher is planning to discuss about the unit plan in Physical education and add a point of view of the other countries on the results of this study.

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Parallel sessions 2
In search of innovation in daily practice: Presenting the results of a Dutch and Flemish professionalization trajectory for practitioner research

Joke Hurtekant, Artevelde University College, Belgium, Mieke Lunenberg, VU University Amsterdam, the Netherlands, Hanne Tack, University Ghent, Belgium, Jorien Radstake, Windesheim University of Applied Sciences, the Netherlands, Annemie Demol, University College Ghent, Belgium, Lisa Brille, Centre for Adult Education, Belgium

RDC: Professional Development of Teacher Educators
Subtheme: Innovation

Practitioner research / professionalization trajectory / teacher educators

Abstract
Over the last decade, there has been a growing interest in the professional development of teacher-educators with a focus on their research attitude (European Commission, 2013; Lunenberg et al., 2014, Tack & Vanderlinde, 2014). Responding to this general interest, we present the results of two initiatives in which practitioner research is used as a means to professionalize teacher educators. Both initiatives (in Flanders and in the Netherlands) consist of a professionalization trajectory in which a heterogeneous professional community of teacher educators meet regularly spread over the academic year, focusing on jointly input and exchanging experiences. In between these sessions, the participants work at their own research and get feedback from their mentors. In this symposium, we would like to present the process and results of three teacher educators who took part in these professionalization initiatives:

The first contribution of Jorien, participant of the Dutch professionalization trajectory, zooms in on enhancing the quality of her written feedback in order to stimulate the growth of her student-teachers.

The second contribution of Annemie, participant of the Flemish professionalization trajectory, questions the use of portfolio as a tool for differentiated learning in teacher education.

The third contribution of Lisa, participant of the Flemish professionalization trajectory, focuses on stimulating student-teachers to use ‘historical thinking’ in history lessons and setting the example in her own lessons.

It is clear that these contributions link to main pedagogical frameworks as differentiation, feedback and second-order teaching. These theories have been made manageable in order to evaluate their usefulness in daily practice and bring forth innovation in teacher education. In this way, this symposium connects closely to the innovation theme that is proposed by the ATEE-congress. Therefore, we would like to propose the following statement to the public: ‘Is practitioners’ research a useful means to stimulate innovation in teacher education?’

References
Presentation 1: Stimulating students’ growth through written feedback
Jorien Radstake, Windesheim University of Applied Sciences, the Netherlands

Aims
The aim of this self-study is to develop my professional self-understanding (Berry, 2009). For some years now I have been coaching distance learning students in doing their final research task. To do so feedback is necessary (as I also experience in this self-study). As a teacher educator I try to find the right balance between ‘telling’ the students what they should do and giving them the opportunities to ‘grow’, for example by asking questions (Berry 2009). Mostly my students are pleased with the feedback I give, but until now I did not use a specific system to do so. According to Hattie & Timperley (2007) feedback can be a very powerful tool for learning. To optimize the use of this tool, I want to give feedback that systematically makes students grow and helps them to achieve ‘deeper learning’ (Hattie & Timperley, 2007).

Research Question
How can I improve my written feedback on students’ research plans to enhance their growth?

Methods
My study consists of two sub studies.
I have analysed the written feedback that I have given on research plans of 7 students in 2014-2015. For the analysis I used the model of Hattie & Timperley (2007) who distinguishes: feedback, feed up, feed forward and task, process, self-regulation, self. For the level of the feedback I used the model of Glover (2006): 1 indication, 2 correction, 3 indication or correction with an explication. I also analysed my comments as ‘telling’ of ‘growth’ (Berry, 2009).

In scheme:

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To enhance the trustworthiness two critical friends have been involved in the analysis.
2. Based on the results of the first sub-study I will try to optimize my feedback to 7 students in the first semester of 2016, using the same analysis again. Furthermore I will interview these students to ask what feedback was most helpful for them. This sub study will be finished by the end of April 2016.
Results
The first sub study showed that I give much feedback on the task and less feed up and feed forward on the levels of process and self-regulation. Most feedback is on level 3. The analysis also shows that half of my remarks are ‘telling’ remarks and the other half are ‘growth’ remarks. The results of the second sub-study will show if I succeed in shifting my kind of feedback and how this will be experienced by the students.

Conclusions and Discussion
The first sub-study has offered insights in the way I have given written feedback to my students until now and has enhanced my professional self-understanding. I expect that the second study will offer insights in the way I can improve my feedback. These outcomes may also be helpful for other teacher educators who coach students in carrying out research and, as a consequence, for the improvement of teacher education. What strikes me is that giving feedback on task level proves to be easy to do and until now has satisfied both me and my students. The question, however, remains: is it effective for the students’ growth?

References

Presentation 2: Teach as you preach: portfolio as a tool for differentiated learning in teacher education.
Annemie Demol, University College Ghent, Belgium

Aims
Although differentiated teaching receives a growing interest in the curricula of teacher education, teacher educators do not often adopt a differentiated approach themselves. However, experiencing a certain approach to teaching is said to have a greater learning effect than just learning about it. Moreover the High Level Group on the Modernisation of Higher Education recommends in its report to the European Commission (2014: 18) to enhance the quality of higher education by adopting more creative and individualised pedagogical approaches. The teacher training programme at University College Ghent thus decided to support initiatives to implement a more differentiated approach.
Being confronted with a small but heterogeneous public of future teachers of French, I set out to examine how to design a differentiated approach to my own teaching.

Research Questions
Since portfolio has been promoted as a student-centred tool for language learning (Ziegler, 2014) and as a tool for competency-based learning in teacher education (Janssens, Boes & Wante, 2003; Meeus & Van Looy, 2005; Newby et al., 2007; Newby, Fenner & Jones, 2011), it was set against the model of differentiated instruction developed by Struyven, Coubergs & Gheyssens (2015) in order to answer the following question: to what extent does portfolio also meets the principles of differentiation (Tomlinson & Imbeau, 2013)?
Since feedback is considered crucial both in working with portfolio and in differentiated instruction, a second question was raised: how to organise formative assessment (i.e. coaching) congruent both with a student-centred and competency-based approach and with a more differentiated approach, and how to relate it to summative assessment?

**Methods**
In order to answer the first question, I carried out a literature study. To tackle the second question, I interviewed four colleagues working in Orthopedagogy and Social work, about their experience either in working with portfolio or in coaching. A comparative analysis was made of these interviews and the general findings were set against literature and policy documents of the University College Ghent. Outcomes of these analyses were discussed on a regular basis with the Centre for Internal Quality Assurance, the head of the training programme and the participants of the “Masterclass practitioner research for teacher educators in Ghent, Flanders”.

**Results**
The literature study showed that portfolio allows for the creation of individual learning paths. These individual learning paths take into account differences in proficiency, interests and learner profiles and lead to the conception of individually adapted learning tasks. Portfolio trusts ownership of the learning process to the student, allows for teaching up and places formative assessment or feedback at the centre of the learning process.
The subsequent study revealed so far that progression focussed coaching (Visser, 2013-2015) is more congruent with the pillars of differentiated instruction (autonomy, personal choices and interests, indirect process compliments, growth mind-set) and competency development than traditional coaching based on problem analysis. Experiences of colleagues and literature analysis also indicate that progression focussed coaching is most congruent with co-assessment (Dochy, Heylen & Mosselaer, 2003).
The portfolio has been implemented since September 2015. Focus groups are organised with the students. The results will be used to evaluate and improve the approach and to examine how coaching and assessment are perceived by them.

**Conclusion and Discussion**
Portfolio can be an efficient tool for differentiating in smaller groups of future student teachers. Being able to make personal choices stimulates students to set higher goals for themselves. However taking ownership is a competency that needs to be developed over time. Teacher educators should be aware of the time-consuming nature of this process and of competency-based curricula more in general: how can we foster the gradual development of self-regulation?

**References**


**Presentation 3: Historical Thinking, a reality check**

*Lisa Brille, Center for Adult Education, Belgium*

**Aims**

The concept of historical thinking is widely known in history didactics. Vansledright and Limon (2006) developed the idea of "doing history" and "knowing history". Van Boxtel and Van Drie (2013) refined this idea, and assume that "doing history" and "knowing history" can't be without each other. Knowledge and practice/attitudes need to be integrated. For instance, when you want to discover historical recurrencies (historical methodology), you also need the factual background (factual history) (Havekes, Van Boxtel, & Coppen, 2012). There's consensus between historians about the importance of historical thinking. However, in every day practice, student's (and probably teachers) find it difficult to combine "doing" and "knowing history". There's a clash in the theoretical literature and the actual classroom practice. As a history didactic, I believe in historical thinking. On the one side it is necessary to teach pupils important facts, and on the other side they need to learn how to implement this knowledge. You can study about the "victims of the Holocaust (Jews, homosexuals, mentally disabled people,...), but you reason historically when you notice that in difficult times in history, these same groups of people are targeted. Student's are enthusiastic and interested in these didactics lessons, but when they need to make the translation to the classroom, they choke. This is surprising since these are clever students, who have a master degree in history, and are thus trained in these skills.

**Questions**

There's a clear clash between the theoretical concept and the daily practice in the classroom. In my practitioner research, I want to investigate:

- Do my students consider historical thinking important in secondary education history lessons? There's consensus in the scientific literature, but do my student's find this as important as myself? Or is it necessary to create other accents?

- Why is it hard for my students to translate historical thinking into real practices? Why do they find this so difficult? Are their situational influences, is it related to the subject that's taught?...

- How can I as a history didactic improve my second order didactic skills to stimulate historical thinking? This is also my primary goal: with the data results, I want to take a closer look at my second order didactics in history: how can I anticipate the needs of my students, and professionalize my own practice as a teacher-trainer.
Methods
In the case study, 4 students with a similar background participate. They all have a master degree in history and they attended the previous semester seminars about historical reasoning. There's a triangulation of method's. Before the traineeship, the students got a qualitative inquiry about their vision on the concept of historical reasoning. In the preparation of the traineeship, they prepare a class with the practice of historical reasoning. During the traineeship, they observe the practice historical reasoning of their partner (peer assessment), the teacher observes the student (teacher assessment), and they reflect on their own class (self-assessment). With this method, we get an overall 360° feedback since all perspectives are questioned. After the traineeship, the data are processed and will be proposed to the students in a focus group.

Results
A first exploration of the data gathered thus far shows the importance of the teacher during the traineeship. When a teacher isn't familiar with the concept of historical reasoning, or refuses to recognise the importance of historical reasoning, it's very difficult for a student to implement this concept in the class. Another indication is the importance of a very clear translation of fundamental research in the Flemish didactic background (differences between curriculum developers in the secondary schools)

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114 – Research-based knowledge and reconciliation of the theory-practice gap in teacher education

Finn Daniel Raaen, Hanne Christensen, Alf Gunnar Eritsland, Anton Havnes, Oslo and Akershus University College of Applied Sciences, Norway, Liv Gjems, Inge Vinje, University College of Southeast Norway, Norway, Kirsten Thorsen, Oslo and Akershus University College of Applied Sciences, Norway

RDC: Secondary Teacher Education
Subtheme: Professional roles of teacher educators

Barriers and meeting points / negotiation of tensions / theory-practice gap

Abstract
Key issues: The symposium explores the idea of research-based knowledge as a means to reconcile the ‘gap’ in teacher education between theory and practice. In this respect, is there consistency between what teacher educators on campus, practice teachers and student teachers claim to be relevant? If not, what are the mechanisms, which are maintaining the current practices? Backdrop; international including Norwegian research show: A widespread confidence that a thoroughly organized transfer of knowledge in teacher education between the various learning arenas feasibly can narrow the ‘gap’. Research-based knowledge, including research skills, are widely held as a necessary vitalizing force. The relevance of this approach is questioned. Case studies in the TPQ project as examples: Priorities of the partners in teacher education compared and clashes of epistemologies displayed. Conclusion - need for re-conceptualizing the transfer approach: Examining whether the mentioned tensions between research-based and experience-based knowledge more appropriately can be approached as a productive part of teacher education. Exploring how differences and boundaries between learning arenas in teacher education can be seen as meeting points for the participants rather than barriers. Seeing oneself and partners as mutual creators of learning in a joint continuous critical reflection on the educative practices of teacher education. Make both differences and similarities between campus teachers, placement mentors and student teachers more explicit. Develop a sense of shared common meaning containing both positive and challenging tensions.

Presentation 1: Student collaboration as learning arena across borders: Students´ experiences on peer collaboration in Teacher Education
Hanne Christensen, Alf Gunnar Eritsland, Anton Havnes, Oslo and Akershus University College of Applied Sciences, Norway

Motivation
When describing their learning within and between two functionally diverse systems, campus and practice schools, teacher education students draw attention to their learning in peer groups (Christensen, Eritsland & Havnes, 2014). They imply that peer groups are essential for their learning in both contexts. This is our motivation for examining the students’ learning in peer collaboration. Our research question is: How do teacher students describe peer group learning as a driving force in their professional development?

Problem statement
In recent years, research on higher education has focused on alternative learning environments, and specifically on the possible outcome of peer collaboration (Dillenbourg, 1999; Domingo, 2008;
In Norway, teacher education is based on a division between campus and practice field, contexts with unique institutional logic and value systems. This division also implies two different learning styles.

**Approach**

Students regard and value peer groups as a safe place. Integration of theory and practice in these groups helps students see the whole picture of the study program through mutual reflection processes, motivation for reading, to hold on to what is “correct” understanding and behavior (Kjønvik, 2004:121). Our investigation based on Sullivan’s (2005) learning “apprenticeships”, the cognitive, supervision with experienced practitioner and learning through professional practice.

**Results**

Students (38) in our study see participating in peer groups as vital to their development and as a setting for reflection combining theory and practice experiences. The group enables support, response on performance. Students support each other, and provide tools and ideas for facing the challenges of the classroom.

Collaboration between peer students dominated by the narrative thinking and telling. “...competence and knowledge is developed through storytelling, experiences, often connected to an event in a context” (Sullivan, 2005:198). In the students’ descriptions we also find paradigmatic thinking, mainly based on systematic analysis. We describe collaboration between peer students as an “apprenticeship” of its own. This apprenticeship seems to have a specific blend of narrative, emotive and relation-based thinking and communication. It also has the potential of reflection on and development of formal knowledge.

Analyzing student descriptions we find that this apprenticeship appears to bridge the gap between learning arenas in a way that contrasts with structural adjustments, mentioned as a possible “bridge” in recent research on Norwegian teacher education (Hammerness, 2013).

**Conclusion**

Students describe their experience of peer collaboration as a crucial element in their professional development. They conceptualize their development as professionals within the framework of the student community. They describe their collaboration in a way that indicates that this community is a bridge between theory and school practice. The challenge for the institution is to include peer learning in the structured teaching programs.

**References**


Presentation 2: “Knowing that”, “knowing how” and “knowing why”: rationales for teaching and learning in the subject pedagogy
Liv Gjems, Inge Vinje, University College of Southeast Norway, Norway

There is worldwide agreement among politicians that the single most important strategy for achieving the educational goals, which we all strive to achieve, is the preparation of, and support for, excellent teachers in all schools. Nevertheless, despite the wealth of commentary on teacher education, little empirical research has focused on the teacher educators themselves (Korthagen, 2000). In this study, we examine what teacher educators emphasise as the central aspects of the curriculum in the subject field of pedagogy. In Norway, teacher education is regulated by a national curriculum that emphasise pedagogy as one of the main subject areas throughout the whole course of study. We will focus primarily on what they emphasise when teaching about the theoretical and practical elements of pedagogy, as well as the research-based knowledge in this field. In teacher education, the local university college and teacher educators can make many important decisions about what and how to teach. We ask the following research questions: What do teacher educators in the subject of pedagogy emphasise in their education of future teachers? What do they say about research-based knowledge in their teaching? Teacher educators are models for methods of teaching, and they represent future teachers’ ideals and values regarding how to teach. However, their conceptions about teaching and pedagogical work have received minimal research attention. Politicians and the teachers groups expect teacher educators to implement and fulfil national educational reforms. They are exposed to the demands and constraints associated with both globalisation and professionalisation. Some results show that all the informants discussed research-based knowledge primarily from the standpoint of ‘if I should teach it’ rather than ‘when I teach it’. They express that they to some degree can chose and emphasise subjects they give priority and would like more opening to do this.

Presentation 3: Placement schools as a learning arena for teacher education: The dilemmas and priorities of school leaders
Finn Daniel Raaen, Kirsten Thorsen, Oslo and Akershus University College of Applied Sciences, Norway

This paper examines the impact of school leadership on development of placement schools as learning arenas for teacher education. The findings indicate that principals handle the placement assignments as an administrative rather than an educational task, ignoring mandated elements of their responsibilities. They are seldom proactive but mostly firstly react when asked or problems arise. Their priorities also concerns staff’s lack of dedication to being a placement school. Probably more important for principals is lack of educational support by teacher education. Research questions:
1. What factors facilitate and complicate principals’ roles as administrative and educational leaders of placement schools?
2. How do principals prioritise between these roles?
3. What reasons do principals give for their priorities?

Data analysis
i) A semi-structured survey completed by the principals at all of the 69 placement schools associated to the city-based university college. The survey was based on self-reporting about the formal collaboration between the principals and teacher education; their involvement in placement mentors’ work, the principals’ arrangements for the student teachers’ placement and the principals’ opinions about whether their school functions as a placement school.
ii) An in-depth, open-ended interview with the principals from four of the placement schools on the same issues mentioned in item i).

iii) A survey conducted with 45 placement mentors from various of the same 69 placement schools on the same issues mentioned in item i) and ii), served by the same university college.

iv) An in-depth, open-ended interview with four placement mentors from the placement schools, who also were part of the survey.

Findings
Most of the principals described a good placement school as a place where student teachers are part of a social rather than an educational community. This downplaying of an educational leadership is also found in the principals’ descriptions of themselves and their activities, in the survey and the interviews.

They did not seem to take on a supervisory role in relation to their placement mentors, neither in the making of nor in the facilitating the mentoring.

Only in exceptional cases did the principals engage in supervision of the student teachers. The principals described student teachers as a possible resource in the development of the placement school. However, there are no indications that the principals made use of this resource in the educational development of the placement school. They described themselves, and were described by the placement mentors, largely as reactive leaders who did not actively seek to get ahead of educational challenges but rather reacted only when asked or when problems arose.

The responses from the principals indicate that the university college provided for a cooperation where the principals’ primary role was to act as an administrator and practical facilitator.

The principals criticised the university college for lack of a clear vision and for not being in dialogue with them about how they could develop as proactive educational leaders of placement schools and as part of teacher education.

The principals stated that they missed a more professional and academic focus in the meetings, which the teacher education arranged. The principals wanted support to develop their schools to be more educationally and research-based updated placement schools.

The principals were dissatisfied because the university college had little knowledge about what schools they were sending their student teachers to. On this basis, the principals in this study raised questions about the visions and core values of teacher education.
The potential of agonistic practices for democratic citizenship in primary education

Jeroen van Waveren, iPabo University of Applied Sciences, the Netherlands

RDC: Education for Social Justice, Equity and Diversity
Subtheme: Innovation

Agnostics / democratic education / pluralism

Abstract
The current debate about democratic education seems to be dominated by a (neo) liberal conception of democracy, which especially aims at the creation of knowledge about the democratic system, transmitting commonly accepted values and ways of living, and teaching certain skills that make sure citizens can live together peacefully and most of all; can reach a rational consensus for our conflicts. This idea of the possibility of a rational consensus can be a threat for pluralist democracy, equity and social justice.

According to the Belgian political theorist Chantal Mouffe there is always an inherently conflictual aspect of pluralism (Mouffe, 1999), that seems to be denied within the current commonly accepted (liberal) interpretation of democracy. The suggestion of rational consensus creates an idea of the rational and the irrational, the right and the wrong, friend versus enemy, and therefore antagonism will automatically occur. Within this (neo) liberal interpretation, our passions are erased from the political and restricted to the domain of the private, as they are seen as an obstacle to reach a rational consensus.

Mouffe suggests that our passions are fundamental for democratic politics and we have to ‘mobilize those passions towards democratic designs’ (Mouffe, 2000, p.103). Because of these passions there is always the possibility that conflicts will take an antagonistic form, but the challenge is, according to Mouffe, to acknowledge and transform the antagonistic relation into an agonistic one. Within this agonistic approach, pluralist democracy is where conflicts can take an agonistic form, that means a confrontation between adversaries instead of enemies. It is an important characteristic of our democratic public space where ‘conflicting points of view are confronted without any possibility of a final reconciliation’ (Mouffe, 2013, p.92).

Inspired by the ideas of Mouffe, pedagogical questions that arises is how we could create an agonistic approach on democratic education in which antagonistic relations can be transformed into agonistic ones. This paper explores the notion of agonism and the potential of the agonistic approach, for democratic education in primary education. How can teachers recognize antagonistic practices and relations in their classroom and how can they ‘transform’ them into agonistic ones. This will suggest an alternative way of thinking and dealing with democratic education for primary school teachers, an approach that acknowledges and appreciates the pluralistic nature of the social world. During the presentation of this alternative approach for democratic education and the possibilities for primary school teachers, participants will be challenged with different dilemmas and theses to discuss the potential of these ideas in relation to education for social justice, equity and diversity.

References
What we talk about when we talk about citizenship. Why citizenship education has to be critical

Monique Leygraaf, iPabo University of Applied Sciences, the Netherlands

RDC: Education for Social Justice, Equity and Diversity
Subtheme: Innovation

Critical citizenship education / philosophy / social justice

Abstract
Whereas policymakers and educators underline the importance of citizenship education, underlying ideas and assumptions about good citizenship often remain unspoken despite of the fact that for instance a good behaving citizen in a Western European country during the nineteen fifties can not be compared to the transparent, sharing citizen in a dystopian novel like The Circle by Dave Eggers (2013). Because of the wide range of unspoken conceptions of good citizenship, this theoretical paper will give account to these conceptions and argue that citizenship education has to be critical. In order to explore the critical aspect of citizenship education, various mainly philosophical notions will be examined. First of all, we will explore Hans Georg Gadamer's (2006) notion of the possibility of the opening up of new horizons, which prevents us from uncritically accepting our contemporary criteria and prejudices and which helps us to evaluate those criteria and prejudices within their own historical horizon. Secondly, Hannah Arendt's thought on (Socratic) thinking (1978) - which finds its dangerous counterpart in Eichmann's thoughtlessness (Arendt, 2006) and in totalitarian fear for the activity of thinking and a plurality of perspectives (Arendt, 1962) - will be introduced in order to underline the importance of thinking through (also) mainstream assumptions. Furthermore, notions developed by Amartya Sen (2010) and various critical pedagogues regarding social justice will help us understand that citizenship education has to be critical in order to prevent us from uncritically reproducing unbalanced power structures. Therefore, making heard the voices of the oppressed can be considered a major purpose of citizenship education. Finally, the importance of conflict (Appiah, 2006) and dissensus (Mouffe, 2013) will be explored to understand why citizenship education can not do without making heard the voices of the minorities having contrasting and conflicting opinions (compared to the majority).

This theoretical paper contributes to existing discussions on critical citizenship education within the RDC Education for Social Justice, Equity and Diversity. The various presented notions on the critical aspect of citizenship education will be put up for discussion during the presentation.

References
High quality differentiated instruction - a checklist for teacher professional development on handling differences in the general education classroom

Wouter Smets, Karel de Grote Hogeschool, Belgium

RDC: Education for Social Justice, Equity and Diversity
Subtheme: Innovation

Differentiated instruction / evidence-informed teaching / teacher professional development

Abstract
This paper presents the results of a review study on differentiated instruction. It discusses the way the concept of differentiated instruction may be applied in an evidence-informed way by presenting a checklist for high-quality differentiated instruction (DI). This concept has been developed to handle differences in learning status, interests and learning profiles within a classroom (C. Coubergs, Struyven, Gheyssens, & Engels, 2013; C. Tomlinson, 2000; C. Tomlinson, 2001). Differentiated instruction may be described as a comprehensive concept including a variety of teaching approaches. Both Tomlinson (2000) and Coubergs and Struyven (2015) have tried to define the concept by proposing a model for DI. The comprehensive character of differentiated instruction makes it sensitive to critique as it is rather difficult to state whether DI is an effective classroom practice. Research on effectivity of DI is scarce and focusses on elements of the construct rather than on the construct as a whole (Firmender, Reis, & Sweeney, 2013; Riviou & Kouroupetroglou, 2014; Smit & Humpert, 2012).

We tried to tackle the question of how to implement differentiated instruction in a research-informed way. We sought answers in meta-analyses on effective teaching practices, by using the work of Hattie (Hattie, 2009, 2012), Marzano (Beesley & Apthorp, 2010; Marzano, 1998) and Muijs and Reynolds (Muijs & Reynolds, 2011). In their work they make various references to elements that constitute a defining part of the construct of differentiated instruction. To investigate accordance between this literature and both models for DI, we have operationalized all elements in these models. We scrutinized whether the operational elements in these models are characterized by the afore mentioned authors on teaching effectivity as effective teaching practices. The result is an evidence-informed checklist (Scriven, 2005) that helps teachers who want to apply the concept of DI in their practice.

The need for this evidence-informed checklist is clear as many practices exist of teachers implementing differentiated instruction in a selective or ineffective way. Some authors describe DI as merely an attitude (Van Aevermaet & Sierens, 2011). Our checklist clearly indicates that DI also requires a repertoire teaching methods. Other authors such as Wijnia, Hulsebos, and Hummel (2010) propose differentiated instruction practices that cannot be supported by evidence.

This checklist may help teachers to assess their own teaching practice. It deserves a role in teacher professional development programs. It is not designed as a definitive set of criteria that every kind of differentiated instruction must meet, rather it is a tool to discuss high quality evidence-informed teaching practices that aim at making teaching in diverse classrooms more accessible. It may therefore also be applied by preservice teachers and teacher educators as a tool to discuss the practicum experiences.

We would like to present the checklist for high quality differentiated instruction on the ATEE conference in an interactive way by proposing in our session two examples of differentiated instruction approaches to the public. We will let the attendants discuss in small groups whether they
regard the proposed approaches as high quality DI. After this moment of unstructured discussion we scaffold the discussion by presenting the checklist and ask the attendants to write down suggestions to improve the presented examples based of the checklist criteria. To summarize the discussion we present our own estimate of the approaches and we formulate our own suggestions for improvement. In a more extended way this paper may also be elaborated as a workshop. This paper is relevant for the conference theme of innovation. The checklist presents a tool for high quality DI for teachers, teacher educators and preservice teachers that want to innovate their own teaching in a thoughtful evidence-informed way.

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170 – An Important Role of Professional Educators: Mentoring

Elsa Price, Faulkner University, United States of America

RDC: Educational Leadership and Management
Subtheme: Professional roles of teacher educators

Mentor / professional educator / qualities of a mentor

Abstract
The professional educator has many roles: teacher, researcher, time management expert, friend, leader, student, and mentor. The focus of this presentation is the Professional Educator as Mentor. The qualities needed to be a good mentor and a review of different mentoring procedures, techniques, and mentoring systems will be discussed. The session will be an interactive one with the participants taking an active role. Several scenarios involving the professional educator with teacher interns and other educational professionals will be presented. The scenarios presented will be related to pedagogical and content knowledge, classroom management, and interpersonal skills. The attendees will be divided into focus groups then develop and present the group’s recommendations for mentoring those involved in the scenarios using the different techniques presented. Group interactions and discussion will be incorporated into the program.

References
School leadership and professional development in context

Susana Gomes Fartura, Agrupamento de Escolas de Carnaxide-Portela, Portugal

RDC: Educational Leadership and Management
Subtheme: School-based teacher education

Primary school / professional development / school leadership

Abstract

The Portuguese school system is organized in several groups of schools coordinated by a head leadership, frequently placed in a secondary school. One director and two or three sub directors organize all the pedagogical and administrative work and establish communication between the school and the community. In the smaller schools that compose each group, generally, there is a designated teacher who is responsible for the communication between the head leadership and the smaller school that are called coordinators.

This article aims to present our experience as a primary school coordinator in accumulation with the normal role as a teacher of a primary second year class with twenty three students, in a primary and kindergarten school in Oeiras county, in Lisbon's district, in Portugal.

The research design used for this work was a case study. The data analysis was based on school documents and the diary written by the investigator while teaching in this school, under a qualitative interpretation of his comments and reflections.

Our first goal was to make a characterization of the school and the school environment and to list the main difficulties of the school organization. Our second goal was to set up an intervention plan for the school coordinator to increase motivation and innovative practices towards a more democratic school.

In what concerns school characterization, this has six primary level classes and two kindergarten classes, in a total of one hundred and seventy students between three and fifteen year old. There are eight class teachers, two support teachers, one special education teacher, six extracurricular activity teachers and six school support staff working daily in the school. One day per week, also came to this school a psychologist, a social assistant, an occupational therapist and a speaking therapist to work with the students. There was also a music project called «Generation Orchestra» using the school free rooms from 3 to 8 pm.

The school environment is socially and culturally poor and students are mainly from a gipsy community and an African community from Cape Verde, who live in nearby neighborhoods. This school is also characterized to have great instability in the group of teachers because only two teachers are in the board as long as others are newly recruited every year.

Some of the tasks as a school coordinator set by the head leadership were: 1) to coordinate with the head leadership of the schools' group; 2) to coordinate with all the professionals working in the school; 3) to supervise the school cafeteria and make a daily report on the meals quality; 4) to coordinate with the city hall to repair or substitute any damaged equipment; 5) and to supervise the educational support staff’s work.
Main difficulties in the school coordination were: 1) the unclear guidelines from head leadership; 2) the lack of an established time table to meet and discuss school organization with other teachers and staff; 3) the conflicts between support staff and students, parents and other teachers, due to the lack of specific training.

This article emerged from every day practice, faced as an opportunity for professional development in the leadership area, many times unapproachable to teachers with temporary contracts of employment. Therefore, we believe this can be an example for other experiences of professional development in context and as a challenge to motivate other teachers and school staff to create a more innovative and democratic school.
Entrepreneurship as a competence: in search of a definition for ATEE

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RDC: N/A
Subtheme: Innovation

Basic education (primary & secondary) / competences-based teaching / entrepreneurship

Abstract
The purpose of this paper is to present the state of the art on the elements that mould entrepreneurship, from a review of updated literature. Based on this reviewed, it is also intended to propose a research involving members of the ATEE, to establish a definition of the competence 'entrepreneurship' and its constituent elements, as well as its proficiency levels for primary and secondary education. The results of this research will be used to promote the training of teachers for entrepreneurship teaching in the different educational levels.

The concept of entrepreneurship has been widely presented in the literature, both inside and outside the school environment. In some cases, defined as a generic construct; in others, as a generic competence or linked to employability; finally in other cases, as an element of other skills. You will often see references to innovation, creativity, autonomy, initiative, achievement orientation or leadership, as elements linked to entrepreneurship. Thus, different concepts are specifically defined, in the literature, as competences or as elements of competences or other skills. For example, in some cases, personal initiative is presented as a competence within entrepreneurship, while others consider entrepreneurship a competence, which includes inter alia the personal initiative.

There seems to be no objective arguments so that a way to organize the various elements around entrepreneurship would be better than another. However, we understand that it would be suitable for ATEE, and a work priority of RDC ENTENP-ED (Enabling Teacher For Entrepreneurship Education) to standardize the concept of entrepreneurship as a competence, define its competence elements, indicators of achievement and proficiency levels for primary and secondary education.

To carry out this project, we will use a qualitative methodology. From the elements of competence defined, we will select a sample of professionals of education who are members of the ATEE, to apply different Delphi rounds to the 'library of competences' developed. Using this technique, we will select the most relevant elements of competence. Also we will establish the most appropriate assessment indicators and levels of achievement for the different educational stages.

As the main result of this project it is expected to provide the ATEE of a document that standardizes the concept of 'entrepreneurship' in Europe, conceived as a competence, which can serve as a reference for teaching at different levels of the educational system (primary and secondary education)

References


In-service science teacher training and pedagogical supervision on science, health and sustainability education: a comparative study between Portugal and Brazil

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RDC: Health, Environmental and Sustainability Education
Subtheme: School-based teacher education

In-service science teacher education and training / science teachers / science, health and sustainability education

Abstract

Introduction
There is a continuous effort around the world to improve the practice of teaching and teacher development [1], with its formative evaluation being recognized as an essential and distinctive component in the improvement of their education and professional growth [2]. The education and training of Portuguese teachers of primary and secondary education in Portugal includes pre-service, specialized and in-service training [3]. At the school level, the development of educational projects has coordination structures to ensure the coordination, supervision and monitoring of school activities, promote collaborative work and conduct evaluation of teaching staff performance [4]. With similar aims, in Brazil the National Network of Continuing Teacher Training [5,6] was created with the main purpose of contributing to the quality of education and improving student learning through an extensive process of articulation of management agencies, educational systems and training institutions, especially public universities and community.

Aim
Therefore, this survey aims to analyze the similarities and differences between the perspectives of 5th to 12th grade natural sciences teachers (students 9 to 17 years-old) in Portugal and Brazil regarding continuing professional development and supervision in science, health and sustainability education.

Research Questions
The specific research questions are the following: what is the nature of continuing professional development and supervision in science education available to natural science teachers in Portugal and Brazil?; what differences exist between the representation of these teachers on INSET that they have attended?; what is the degree to which these teachers need professional development in health education and sustainability education?

Methodology
Data was generated through an online questionnaire of a representative random sample of Portuguese natural science teachers responsible in the curriculum department of the subject area of natural sciences in primary and lower secondary schools (n= 375) from 713 school networks and 185 individual schools, to compare with the Brazilian data gathered from a convenience sample (n=276) of natural science teachers of the same grades. The questionnaire was based on the results of an exploratory study previously carried out using a semi-structured interview as a data collection instrument [7]. The structure of the questionnaire included: a) background information; b) questions concerning professional development and supervision on science education; c) questions concerning...
professional development on health education; and d) questions concerning professional development on sustainability education. Teachers were initially contacted by an e-mail that asked for their written consent. Data collection is ongoing.

Results
The exploratory study showed that a great variety of INSET modalities are attended by the Portuguese and Brazilian teachers interviewed with the majority of them experiencing a moderate or large impact on their teaching practices. However, there are some differences between the modalities attended by teachers in both countries. Different modalities of collaborative work and self and peer supervision were also described by these teachers in both countries but pedagogical supervision is still in an embryonic form in both countries [7]. We expect to compare these findings with the ones from the questionnaire online, to add more nuances to the analyses of the results by looking at the contextual similarities and differences.

Main conclusions and implications for practice
One important implication of this study is its contributions to increase the quality of natural science teachers’ continuing professional development and pedagogical supervision in the ambit of science education, sustainability and health education at both international and national levels.

References
Internal and external collaboration in school-based health and sustainability education: a comparative study between Portugal and Denmark

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RDC: Health, Environmental and Sustainability Education
Subtheme: School-based teacher education

Health and sustainability education / school principals / schools

Abstract

Introduction
Education contributes to the creation of resilient, healthy and sustainable societies through a systemic and integrated approach that helps societies to address different priorities and issues related with health risks and health promotion, food crises, social vulnerability and insecurity, water, energy, climate change, disaster and risk reduction and loss of biodiversity [1,2]. Therefore, following the challenge launched by 2030 Agenda for Sustainable Development [3], this paper argues that the school, like other institution, can help to achieve the goals of sustainable development; but cannot do this alone. Therefore partnerships with other local, national and international initiatives and programs are particularly important. Not less important are the supporting structures and practices within the school, for example collaboration between teachers of different subjects and the support by the school leadership. This paper puts the spotlight on school leaders perspectives on these collaboration and support practices in relation to EDS and HE in Denmark and Portugal.

The theoretical basis for this study is the critical health education approach within the paradigm of health-promoting schools (HPS) [4,5], and the above international guidelines understood in their links with the dynamics of HPS regarding environmental, economic and social dimensions. What the HPS and sustainability education framework have in common is that they employ a multidimensional view on health and sustainability addressing not only individual skills and behaviours but also the environment, society, culture and economy; they are interdisciplinary and holistic; they aim to promote critical thinking, problem solving and participatory and action-oriented education approach in health and sustainability education [6,7,8,9].

Aim
This paper aims to examine the perspectives of Portuguese school principals regarding the internal and external collaboration related to health and sustainability education in primary and lower secondary schools (students from 6 to 17 years old). The study is a replication of the study previously conducted in Denmark [10]; the ambition, in addition to portraying the views of the school principals in Portugal, was to add a comparative perspective between the two countries in the context of school reforms in both.

Research Questions
The research questions are the following: i) how do Portuguese and Danish school principals perceive internal and external collaboration related to health and sustainability education?; ii) how do school principals perceive the importance of teachers' professional development regarding health and sustainability education?
Methodology
Data was generated through an online survey of a representative random sample of Portuguese school principals (n = 328), to compare with the Danish data gathered in May 2014 from 118 randomly selected principals of primary and lower secondary schools. The structure of the Danish survey was maintained in the Portuguese survey and included: a) background information; b) questions concerning health issues in school practices; and c) questions concerning sustainability issues in school practices. The school principals were initially contacted by phone followed by an e-mail requesting their written consent. Data collection is ongoing.

Results
The study in Denmark showed that health and sustainability education are characterized by insufficient attention to teachers' professional development and by low prioritization of internal and external collaboration [10]. We expect to compare these findings with the ones from Portugal, and to add more nuances to the analyses of the results by looking at the contextual similarities and differences.

Main conclusions and implications
The analytical ambition is to conceptualize the interactions between contextual and structural factors on the one side and the school principals' perceptions and priorities on the other in both countries. Based on the findings the study will draw implications for further research, but also for professional development of school principals regarding health and sustainability education at both international and national levels.

References


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140 – Mastering the Best Teachers of Health Education: a Challenge for Physical Education and Health Care Policy

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RDC: Health, Environmental and Sustainability Education
Subtheme: Innovation

Health education / health care / physical education / policy

Abstract

Global Call for Action has elevated the importance of health promotion and health-enhancing physical activity as a policy priority throughout the world. Therefore training and enhancing potential of teachers in health and physical education to promote healthy lifestyle is a Challenge for Teacher Education and Health Care policy. Ukraine needs qualified teachers to fulfill health promotion through education and exercises because of modern practice of health-related care. But there hadn’t been proper university Master programs in Health Education till now in Ukraine. In this case educating the best teachers in Health Education to promote healthy lifestyle is the burning point nowadays in our country.

The aim of this paper is to identify some problems connected with teaching and learning best health educators at the master degree level in University of Physical Culture. The main method would be case studies master group of study managed in Ukraine: in the field of Lviv State University of Physical Culture. These specializations of study were actively observed by authors of this paper while teaching or learning.

Lviv State University of Physical Culture (LDUFK) is one of four in the field of physical education and sport licensed (2014) and accredited (2015) to provide educational activities in new for Ukraine specialty ‘Human Health’. For prepare to carrying out educational activities under this the department of ‘Human Health’ has been established in 2008. The main scientific project of Human Health Department is ‘The continued professional development of specialists’ sphere of Physical Culture of the Health Education and healthy life style support’ (in order to Ministry of Education and Science of Ukraine). Therefore the main questions to acquirement best practices how: to provide students with knowledge and critical thinking of how research evidence informs and influences current health promotion activity; to foster the development of best teachers with transferable intellectual and study skills who can make a socially responsible contribution within their chosen career path.

Curriculum modernization according to international standards of training quality was created (improvement of obligatory subjects (20%), introduction of new ones (25%), new elective courses teaching in English (10%) for Bachelors, Masters, and PhD students). New MSc Human Health programme in LDUFK, can be considered as good practices of disseminating and implementing of innovation educational projects necessary for increasing of professional potential teachers in the field of health promotion and health care. The first Graduates in new Master’s degree programme were in 2014/15 academic year. The personality compound of health preserving competence and stage of its formation were analyzed.
At the beginning of the paper there will be a presentation of some insights from existing literature with regard to teaching and learning problems in multicultural environment. Then, two case studies will be treated as the empirical reference to previous researches and conceptualizations in this area. At the end of the paper main observations gathered by authors will be discussed with reference to some possible teaching and organizational implications.
Learning during the practicum: The construction of teacher's identity through the analysis of critical incidents in the initial training of teachers

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RDC: Primary and Pre-primary education
Subtheme: School-based teacher education

Critical incidents / identity / pre-service teachers

Abstract
The teacher's identity is the set of cognitive representations related to oneself which are built and developed mainly in the context of training and practice (Beijaard, Meijer & Verloop, 2004). This identity is expressed through speeches about oneself and the social actions carried out in the development of his/her teaching performance (Akkerman & Meijer, 2011; Monereo, 2011; Stenberg, Karlsson, Pitkaniemi & Maaranen, 2014).
Some of the main things that happen in the classroom and help a lot to reflection and maturation of the identity of a teacher are 'critical incidents'.
A Critical Incident (CI) is an unexpected event of specific content, and therefore, the teacher does not have an answer adjusted to this event (Nail, 2010).
A critical incident is, therefore, an experience in the classroom that causes emotional and/or cognitive destabilization reported as critical by the subject in question, and is bounded in time and space (Monereo, 2011).
The use of these critical incidents (IC), as tools for the investigation of the teacher's identity, has been used mainly in initial training (Tripp 1993; Estrela & Estrela, 1994) but there are few studies on training students in 'pre-service'.
This study analyses the teacher's identity construction of students of Primary Education degree from the characterization and resolution of critical incidents that they have to face.

The research aims to answer the following questions
How do the students in pre-service build their teacher's identity?
What critical incidents arising in the classroom practices are chosen as relevant and/or important for building their teacher's identity?
How do the students face with these critical incidents, what are the strategies that they choose and what results do they get?
How do these critical incidents influence on the construction of their identity as future teachers?

The objectives of this study are
Identify the representations of teacher's identities of pre-service students emerging from the discourse of the students in practical training in different schools in relation to their conceptions about the methodologies, roles and feelings associated with the experience at schools and in their university education.
Describe the most important critical incidents considered relevant by the students and how the students react to them in the classroom.
Analyse how CI are influencing in the construction of identity as a future teachers.
Sample
The participants are 20 students of the Primary Education degree in the Faculty of Psychology, Educational Sciences and Sport - Blanquerna (Universitat Ramon Llull, Barcelona) enrolled in the first year of practicum. The students have answered the questionnaire EPIC (Badia, Monereo and Meneses, 2011) and a sub-sample of 10 students was selected and semi-structured interviews were conducted.

Results
In this moment, we are analysing the data and we expect that we can explain which are the most typical critical incidents that happen during the first year of the practicum and how they influence the construction of their identity.
The analysis of the interviews was based on discourse analysis of the participants and it was analysed with software Atlas.ti 6.0 (Muhr, 2000).

References
Abstract
This paper presents the findings of an exploratory case study examining parents' perceptions of parent-teacher relationship practices, among two special needs schools, two schools serving low-income and at-risk populations, and two mainstream primary education schools in the Netherlands. There is a need for studies critically examining how schools communicate and attend to the needs of children and families from diverse backgrounds, in particular ethnic minority and low-income families, in order to provide effective strategies for building trust and agreement between parents and teachers. Previous studies have pointed at strong impacts of schools' contexts and their relations with various groups of parents (1,2,3). Parents with different ethnic-cultural backgrounds appear to differ with regard to types and levels of involvement (2, 4). For the population of students with special needs, parental involvement is obviously considered important, but few studies address how parent advocacy and home-school collaboration in special education can be improved (5). Research involving a comparison of the levels of parental involvement of students in the general population and of special education students is limited (6), even more so within families of special education students from diverse backgrounds (7).

This study is oriented towards types of involvement, which include home-oriented practices, especially supporting parental involvement in children's learning at home, and communication-oriented practices that bridge the gap between home and school, thereby using two concrete types of family involvement behaviours from the Epstein Model of Parental Involvement (8) as a guiding framework. We focused on specific parent-teacher relationship practices regarding (the support of) home learning activities, and agreement, trust (9), and two-way communication (10).

The purpose of this study was (1) to uncover both differences and similar patterns of parent-teacher relationship practices in different school types and in schools with parents from various social and cultural backgrounds and (2) to find inspiring examples of strong parent-teacher relationship practices, which lead to coordinated home and school efforts in order to meet children's needs. Research question: 'What are the parents' perceptions of parent-teacher relationship practices in different primary education school types and differing social environment compositions?'

Schools were selected as follows: Two mainstream primary schools serving average-to-high-income populations and less than 15 % pupils with special needs; Two schools in an at-risk area; 30% of the pupils come from low-educated families. Within the group of pupils receiving complex special support (45%), 20 percent also receives home support; Two special needs schools, serving pupils with learning disabilities and mixed population parents.
The study used a mixed-methods design. A parent survey and a semi-structured interview was conducted with respectively 271 (return rate 39%) and 27 parents. The results illustrate how parents and teachers in special education and at-risk schools are accustomed to ‘two-way communication’, in contrast to mainstream schools. Teachers in special education and at-risk schools are more familiar in interacting with parents, involve them more in decision-making and consider homework coordination perfectly normal. They search agreement as to how they share their responsive tasks and responsibilities with parents, and strive for shared expectations about how parents can effectively support their children at home. Moreover, teachers in special education explicitly pay attention to the feasibility of development-related goals. In contrast to that, mainstream school parents are critical about how schools cope with learning and behavioural issues. It is a greater challenge for parents to establish a working relationship with the school. The recent introduction of the Appropriate Education Act in the Dutch school system (2014) poses an important challenge for mainstream schools to provide appropriate services to children with different special needs. Teachers may learn from teacher-parent relationship practices in at-risk and special needs schools.

References
200 – Why he makes positive changes: a tale of a rural teacher

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RDC: Primary and Pre-primary education
Subtheme: School-based teacher education

Identity / rural teacher

Abstract
China have more than 3 million rural teachers who works in the under-developed areas such as areas inhabited by minority nationalities, remote and poverty-stricken areas which have very limited educational resources. Despite of so many disadvantages, some rural teachers endeavor to reform and create more learning opportunities for their students. Teacher A is one of them. This study tries to explored the deep reasons about why teacher A makes positive changes from the lens of identity. By using in-depth interviews, one-month participant observations as well as requiring the case teacher to write reflective journals, the research tries to examine how the case teacher construct and reconstruct his teacher identities.

Inspired by the current literatures, this research focused specifically on how the case teacher navigate and construct his teacher identities among the external and internal factors. The external factors include the macro, meso and micro level ones while the internal factors include the cognitive, emotional and moral ones.

Findings from this research confirm existing literature regarding teacher identity formation is an ongoing process of how to construct and reconstruct their meanings of 'being a teacher'. Furthermore, it provide particular understandings about the complexities of Chines rural teachers' working and living lives. Their perseverances to make a difference rooted their educational history and living experiences. They have their inherent responsibilities to their pupils and communities, they are active to be part of the changing world.
The results suggest that in order to support and develop rural teachers, teacher identity should be regarded as the essential access to their professional life. Teacher identity is holistically embedded in multiple contexts. Chines rural teachers' innovative teaching are derived from interactions with their pupils, fellow teachers, headteacher, and communities.
3 – Professional Conceptions about Working with Students in Teacher Education

Leah Shagrir, School of Continuing Education & Professional Development, Israel

RDC: Professional Development of Teacher Educators
Subtheme: Professional roles of teacher educators

Higher education / professional conception / teacher educator

Abstract
The teaching component in higher education requires a great deal of work in planning, constructing and teaching courses, correcting exams and papers to assess students' achievements, giving students advice, and the like. The many activities entailed in teaching require to cooperate and to maintain formal and informal relations with students. Quality teaching and cooperation have a major impact on students and their academic achievements. These qualities help facilitate students' socialization within the higher education institutions, assist in their personal and intellectual development and enhance their perseverance in learning, the formulation of their professional identity and their ambitions for career advancement (Lamport, 1993). As a result, the lecturers are encouraged to enhance their formal and informal ties with students, and institutions are called upon to promote and provide conditions that will facilitate productive work ties (Cotten & Wilson, 2006) and create an atmosphere of positive interaction (Hagedorn, Maxwell, Rodriguez, Hocevar, & Fillpot, 2000; Kim & Sax, 2009).

The research described here examines the professional conceptions of teacher educators with respect to the roles they fill in their work with students. The objective is to identify the conceptions, to learn about the nature of these conceptions and to distinguish among them. Discussing the characteristics of these different conceptions and the way in which they find expression in the work of teacher educators is likely to contribute to understanding the role of these conceptions and their impact on professional identity.

The research tools used include an online questionnaire and personal interviews. The online questionnaire, comprising both closed and open questions, was sent via e-mail to 258 faculty members at the college and was completed by 86 of them. In addition semi-structured personal interviews were carried out on a sample of the participants.

The research results showed that the respondents frequently included descriptions of their relations and methods of working with students, noting the contribution of this cooperation to their professional development and confidence. Multidimensional categorical content analysis of the data clearly reveals that the participants have conceptions that can be characterized according to the following criteria: the way in which work with students is conducted; the nature of the formal and informal means of working with students; the results that teacher educators strive to achieve through cooperation; and their definitions of cooperation they consider to be successful. Positioning the data according to these criteria made it possible to identify three types of conceptions.

Three conceptions that guide the respondents can be identified. The distinctions among these conceptions shed light on their perceptions of their job and on the way they work with the students: (1) The role of the teacher educator is to help and assist students to succeed in their studies. (2) The role of the teacher educator is to empower students and help them grow. (3) The role of the teacher educator is to serve as a mediator for students between teaching theories and practices.
References
5 – Extending the teacher educator role: developing new tools for working with school mentors

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RDC: Professional Development of Teacher Educators
Subtheme: Professional roles of teacher educators

Critical enquiry / cultural historical activity theory / teacher educator tools

Abstract

Aims
This project followed up eight key respondents from a year long ethnographic study undertaken with teacher educators in 2006 (Douglas 2014). The initial research explored the experiences of teacher educators when working with school mentors. The current study, through in-depth interviews, explores reflections and responses from the past respondents to developments which have taken place in teacher education and in their own career profiles over the 9 years since the first study. The findings focus on how teacher educators support their role in higher education which for many in England is moving into schools (White 2014, O'Dwyer and Atli 2015). University-based teacher educators are being marginalised by new school-based training routes with a concern that professional preparation is focusing on practical ‘apprenticeship’ style approaches (DfE 2010). The process of increasingly centralised control of initial teacher education in England has only partially been mirrored elsewhere in the UK and Europe. From the 1990s, teacher education policy in England and Wales became more school-focused while many European countries and other nations extended the process of placing teacher education under the auspices of universities. This research explores new ways for university teacher educators to encourage learning opportunities for school mentors to ensure that their work in teacher education involves research-based forms of critical enquiry.

Research questions
How do you reflect on the changing teacher educator's role in relation to your own experiences in supporting student teachers and school mentors?
In your current experience of working with school mentors, what do you consider to be important for ensuring a research-based form of critical enquiry?

Methodology and theoretical perspective
Eight interviews were semi-structured and qualitative and designed to find out what respondents thought about issues relating to working with mentors in schools and the role of the teacher educator in particular. Interviews were an effective way of exploring the position taken by participants with regards to their experiences as teacher educators over the 9 years since first being interviewed about their work with school mentors. The analysis in this study uses a cultural historical and activity theory (CHAT) lens (Engeström 2008). This focuses attention on learning as a social phenomenon, a process that takes place within social systems that have evolved culturally and historically and that offer participants in those systems certain tools with which to work on a shared object. An activity's object is often described as the true motive of an activity (Leont'ev 1981). Understanding how the teacher educators see the object of teacher education is possible by analysing how they work and use tools within the teacher education activity system. Tools are understood as anything that mediates participants' actions upon objects (Russell 2004).
Findings
The findings for this presentation focus on new tools appropriated by teacher educators which have developed in response to the changing nature of their work. Tensions identified in interview arose from changing policy contexts for teacher training in England. A number of new tools were used in order to negotiate the object of teacher education activity such as an extended university-led forum for developing the ‘collective’ of school mentors, collaborative research projects, shared writing and publication activities and the development of related Continuing Professional Development courses.

Main conclusions and implications
The tools were appropriated in order to develop the school mentors’ engagement with critical thinking and practice and were seen to extend the teacher educator role to the benefit of all involved in teacher education, especially in light of the increased school-based developments in teacher education in England.

Interactive discussion
Question the tools and their potential for use in numerous teacher education programmes across education contexts

References
The Power of the Networking Groups' Managers in a Professional Social Network for Educators

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RDC: Professional Development of Teacher Educators
Subtheme: Professional roles of teacher educators

Abstract
Social networks have become an influential part of modern society. They have attracted millions of users, some of whom use the networks as an integral part of their regular work. Six years ago, the MOFET Institute initiated the establishment of a professional social network, known as 'Shluvim'. The MOFET Institute was established in 1983 by the Department of Teacher Education in the Israeli Ministry of Education, as an institute whose main pursuits would be research, writing and professional development in teacher education, to respond to the needs of communities dealing with and interested in education and teacher education. The network, 'Shluvim', consists of 2,200 members in 152 groups, both closed and open. The reasons for setting up the network included providing a platform for teachers, teacher educators and education leaders in the local language, and exposing those to national and global initiatives in the field of education. In addition, the network was designed to emphasize pedagogical discourse, innovation, entrepreneurship and to provide support for the challenges of teaching and learning.

The aim of the study was to identify the characteristics of the activity patterns of the managers of 'successful' groups on the 'Shluvim' network. An additional goal was to reveal procedures used by group managers and suggest recommendations to assist educators when moderating.

The study employed both qualitative and quantitative data-collection and analysis to investigate the activities of the 11 managers of the successful groups that constituted 7% of all the groups in the 'Shluvim'. The eleven groups were characterized as the leading groups in terms of the number of members and the number of viewings they received.

Findings revealed various reasons for setting up groups and identified characteristics of the managers' role, the reasons for opening the groups, types of content raised in the different groups, and the contribution of participation in the groups to the teachers' professional development. An interesting profile of the studied groups' managers revealed a classification of group managers as either promoters or inhibitors of the group's development. Some groups were set up for advanced training in a limited time context, while other groups united around an urgent concept or issue in the field of education. Group leaders exhibited different patterns of behaviour. Various behavioural patterns were clearly identified in the analysis, including different ways of organizing and managing information. The interviews with the group managers revealed the reasons for opening a group on 'Shluvim', behaviour patterns of group managers, group managers that lead courses or supplementary studies, leading innovative ideas, the profile of group participants, the growth of a group leader, organization and management of information, sustaining the group as alive and active, groups that continue to be active at the end of a course in contrast to groups that terminate their activity when the course ends, group managers that lead the group in a certain area of content and attempting to define who is the manager of a successful group?
The interviews with the group professional managers revealed that group management on a social network is not a simple task. The findings identified different characteristics that could help group development and the promotion of discourse and construction of knowledge that will retain its value beyond the time of the group's operation.

At the Conference, the issue of how to train educators to be team leaders in professional social network will be discussed. It is expected that this presentation will inspire other European countries who speak a unique language to establish such professional social network, adjusted to their unique needs.

References
50 – Developing capacity in the teaching of Social, Personal and Health Education: The experiences of a group of pre-service primary school teachers in Ireland

Carol O’Sullivan, Eva Devaney, Mary Immaculate College, Ireland

RDC: Professional Development of Teachers
Subtheme: Innovation

Implementation / SPHE / attitudes / capacity

Abstract
Discussions relating to the importance of providing health education to children are unlikely to encounter dissenting voices. School health programmes are promoted by the World Health Organisation (2012) as ‘a strategic means to prevent important health risks among youth and to engage the health sector in efforts to change the educational, social, economic and political conditions that affect risk’ (www.who.int) Yet, while there is considerable recognition accorded to the importance of health education, rates of implementation of this curricular area tend to vary. The issues of teacher confidence and capacity tend to emerge quite consistently in the context of barriers to effective implementation at both primary and post-primary level (NCCA 2008; DES 2009; NicGabhainn et al 2010). Programmes of Social, Personal and Health Education (SPHE) at pre-service level endeavour to address these barriers. Increased time allocation to SPHE was a very welcome development in the revised B.ed programme which was introduced in Ireland in 2012. This presentation will outline the results of a research project which sought to determine whether the increased time allocation to SPHE in the B.Ed programme has served to strengthen capacity to teach this complex and varied curricular area. This study was undertaken with a cohort of B.Ed students at the end of their programme of study. It serves to complement and extend a previous study undertaken with the same cohort at the beginning of their programme. A mixed-methods approach was employed in the research. Such an approach involves ‘collecting and analysing both forms of data in a single study’ (Creswell 2003). Informed by the Theory of Planned Behavior (Ajzen 1991, Fishbein and Ajzen 2010), comparisons were drawn between both studies with a view to determining whether student attitudes towards this curricular area had changed in the intervening period. Students' perspectives on their own capacity to teach SPHE at the end of their studies were also detailed in the study.

References
96 – Exploring teachers' beliefs and implicit theories of gender and science education

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RDC: Professional Development of Teachers
Subtheme: School-based teacher education

Gender and science education / implicit theories / Professional Content Knowledge (PCK)

Abstract
Educational research questions of professional knowledge in context of pedagogical content, theoretical and practical knowledge may be considered as highly relevant (Fischler 2010) at the present time. The model Professional Content Knowledge (PCK) of Shulman (1987) is a major factor within the discussion of professionalism in science education. PCK is to be understood as an amalgam of knowledge, general pedagogical knowledge and contextual knowledge and differs specialists from teachers who have the skills to transform science lessons to a 'learning experience'.

However, teaching is not solely determined by explicit knowledge, but is also led by deeply internalized, implicit theories and beliefs about teaching and learning. Furthermore, the intention for a potential educational performance and the definite action in the classroom are sometimes falling apart since unconscious structures take effect. Here, we want especially track back those implicit theories in interrelation with gender and science education (Lembens & Bartosch, 2012) and ask how those structures affect the instructional performance and in what manner teachers are aware of their tacit knowledge and actions.

This research project is based on the development and research project 'Case Studies and Train the Trainer on Gender and Diversity in PFL new'(Bartosch 2015) which accompanied the two years CPD university courses 'Pedagogy and Subject-Specific Didactic for Teachers' (PFL- Pädagogik und Fachdidaktik für LehrerInnen). It aims to delve into further data-triangulating analysis of implicit theories leading curricular activities. A group discussion, interviews and classroom observations are evaluated according to the documentary method (Bohnsack / Nohl / Przyborski) and presented and discussed in the form of case studies (Yin).

The focal interest of the interdisciplinary (gender studies, science education and didactics, pedagogy, sociology, psychology) research project is to explore teaching actions from different theoretical and disciplinary angles in order to provide obtained results to practitioners in science education.

First results provide evidence for the agency of the partly strict gender stereotypes, which become even more pronounced when intersecting with ethnicity. In case of coinciding with a rather academic and elitist view of science and science teaching, they transform science lessons into a hostile environment for girls - not only in teaching the so called hard sciences but also in biology education.

We hope that the results together with the specific case study design does not only contribute to the enhancement of the PFL-courses but also stimulates teachers and teacher educators for using or conducting research in order to establish more fairness of opportunities in (science) classrooms.
References
Mobile learning as educational strategy to enhance critical thinking, metacognition and information searching skills of Italian student teachers

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RDC: Teacher Education and Digital Technology
Subtheme: Innovation

Mobile learning

Abstract
This research is the prosecution of a study, conducted during last academic year, focused on the mobile devices’ affordances, in order to improve the Italian teacher education programmes. The most critical point, highlighted by that study, was represented by the poor development of the students' learning strategies. For this reason, we carried out a further research aimed to analyse the opportunities offered by the mobile devices to enhance critical thinking, metacognition and information searching strategies of Italian student teachers. The student teachers attended a course called Educational Technology during which they had to use of mobile devices (smartphones and tablets) inside and outside the classroom. During the course, we arranged four kinds of lectures of increasing and progressive complexity. We varied two main factors: from an individual to a collaborative task and from classroom activities to mobile and outdoor activities. The types of lectures were as follows: (1) each student teacher had to take notes with his/her mobile devices individually, while the professor was presenting a topic; (2) after searching for online information about a topic suggested by the professor, the student teachers had to compare in pairs their searching strategies and, at home, arrange a potential lesson focused on a school topic (geography, history, maths, etc.) to be carried out with mobile devices in a primary school; (3) the student teachers experienced a flipped lesson proposed by the professor and, then, they made a video, subdivided into groups composed of three members, focused on a school topic (geography, history, maths, etc.) in order to start a potential flipped lesson to be carried out with mobile devices in a primary school; (4) the student teachers went to some primary schools to observe the teaching styles of the teachers; then, subdivided into groups composed of four members, they discussed online and share ideas and materials about the observed teaching strategies; finally, each group worked online and created various digital materials on the pros and cons of the observed teaching strategies. After each of these activities, we administered an online questionnaire to the participants, in order to examine the development of their critical thinking, metacognition and information searching strategies. The questionnaire was composed of 10 closed-ended questions and 4 open-ended questions. The participants involved in the study were 27 primary school student teachers. We chose a mixed approach to collect both quantitative and qualitative data because we wanted to stress distinctive benchmarks for the mobile learning activities in teacher education and to profoundly understand the reasons for these points of reference. The study is still ongoing but the first quantitative data analysis shows a progressive development of learning strategies, in particular for critical thinking and information searching strategies. In addition, the qualitative data analysis is showing interesting remarks made by the students who underlines the opportunities but also the issues related to the use of mobile devices at school.
References
ICT in Teacher Education in Israel

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RDC: Teacher Education and Digital Technology
Subtheme: Innovation

ICT / teacher education / teacher educators

Abstract
In the last decade, many countries have begun the reorganization of their education systems in order to respond to the demands of the Information Era (Hine, 2011). In 2011, the Ministry of Education in Israel began implementing the National Program for improving the education system. As a part of the program, it was decided to re-design the curricula in teacher education colleges, implementing ICT-based innovative teaching methods by faculty members. Also, funding was allocated for upgrading the technological infrastructure.

The aims of this study were to gain insights regarding the implementation process: to recognize different training models and to assess their impact on the pedagogical practices of the teaching staff and the ICT teaching competencies of the pre-service teachers. This paper reports the finding related to ICT integration by faculty members and the state of the pre-service teachers' preparation to teach with ICT.

Research
Faculty members (N=615) and pre-service teachers (N=802) studying in eight Israeli colleges of education participated in the study. The data were collected using two questionnaires distributed to faculty members and students. Both questionnaires examined ICT integration in teaching; self-reported technological, pedagogical and content knowledge (TPACK); attitudes towards the contribution of educational technology to teaching and learning; and access to computers and technological support in the colleges. Also, the students' questionnaire included questions regarding their training to teach with ICT, and the faculty's questionnaire included questions about their experience in ICT-based teaching and perceptions of the level of ICT use in teaching according to the stages of Concerns-Based Adoption Model (CBAM) of Hall and Hord (1987). The questionnaires were administered anonymously during the second semester of the 2013 academic year.

Findings
Faculty members incorporated a variety of ICT-based learning assignments. The most frequently incorporated were assignments dealing with presentation, learning management and visualization. Among 21st century skills, inquiry-based learning and collaboration were the most represented in teaching practices of faculty members while writing tasks in online environments (such as wiki and blogs) were the least popular. Most faculty members and students considered themselves as having adequate TPACK and positive attitudes towards ICT integration in teaching.

The highest predictors of students' TPACK were found to be a number of ICT-based lessons taught in school, attitudes toward ICT integration in teaching and modeling by college lecturers. Unfortunately, the college curriculum did not pay enough attention to the practical aspects of training: half of the students had no experience or had very limited experience in ICT-based teaching during their field practice.
Regarding the TPACK of faculty members, we found that different predictors were significant at various stages of technological innovation adoption (CBAM). At the advanced stages, ICT skills and attitudes of faculty members were significant predictors of their TPACK; at the intermediate stages practical aspects of using ICT played role and at the lowest stage pre-requisite conditions (computer labs availability) and peer support were predictors of TPACK. Whereas most respondents considered themselves as having good TPACK, many reported that they integrate ICT in teaching in traditional ways.

The next target of ICT integration in Teacher Education Colleges should focus on developing innovative ICT-based pedagogy. The presentation will discuss the challenges in ICT integration in Teacher Education.

References
65 – E-Skills of Prospective Teachers

Pavel Pesat, Jan Evangelista Purkynje University, Czech Republic, Jana Lopuchova, Comenius University, Slovak Republic, Jiri Langer, Palacký University, Czech Republic, Dana Slánská, Technical University of Liberec, Czech Republic

RDC: Teacher Education and Digital Technology
Subtheme: Innovation

Digital competence / e-Skills / prospective teachers

Abstract
Digital skills are an integral part of the teachers’ qualification. The fourth annual European campaign e-Skills for Jobs 2015 initiated by the Directorate General for Enterprise and Industry of the European Commission took place in year 2015. As a part of the campaign, the IT Fitness Test 2015 took place in both Czech and Slovak Republic. It is an online test of digital knowledge and skills (e-Skills) that was designed primarily for self-evaluation of public probands. The test was designed and coordinated by the Slovak IT Association under the auspices of the Department of Informatics Education, FMFI, Comenius University in Bratislava in the Slovak Republic and in parallel to that it was coordinated by The Centre for International Cooperation in Education under the auspices of the Ministry of Education, Youth and Sports in the Czech Republic. Hence, in 2015 it was made available in two languages - Slovak and Czech. Beyond the scope of the campaign, the IT Fitness Test in 2015 was specifically used to survey e-Skills of students of the teacher training study programmes at three faculties of education - Jan Evangelista Purkynje University in Ústí nad Labem and Technical University in Liberec, the Czech Republic, and Comenius University in Bratislava, the Slovak Republic. The main focus are e-Skills of prospective special and social educators. The paper describes the methodology and results of testing achieved by students. Student performance is compared to each other as well as to the results of the last year’s IT Fitness Test 2014.

References
http://eskills4jobs.ec.europa.eu/
New, original techniques of creative discussion in the teachers' teaching: report from experimental research and coverage of implementation carried out by teacher educator

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RDC: Professional Development of Teacher Educators
Subtheme: Innovation

Constructivism approach / creative discussion / experimental research

Abstract
The aim of this poster is the presentation of the results of the experimental research concerning the efficiency of new, ingenious techniques of creative discussion in the process of stimulating divergent way of thinking and different problem solving. The research was inspired by the constructivism approach in the didactic process and an idea of problem-based teaching and learning.

The main research questions were formulated as follows:

What is the efficiency of the teaching programme containing 5 new techniques of discussion ('Labyrinth of discussion', 'An ingenious eye', 'A creative round table', 'Four corners' and 'Six cards') in stimulating the main features of divergent thinking (fluidity, flexibility and originality of thinking).

What are the results of different problem solving (connected with: the modification of problematic situation, organization, projects and hypothetical) by means of the new techniques of discussion?

336 students of pedagogy and teachers' specializations from the Jan Kochanowski University in Poland took part in the research project, and they were divided into experimental and control groups. The experimental programme consisted of 3 stages: 1) pretest (Test of Creative Abilities based on J. P. Guilford tests) in the experimental and control group; 2) the application of the series of 12 discussions in experimental groups; 3) posttest in both of the groups. Altogether, the teacher-moderator conducted 83 experimental discussions. During the experimental activities students used new techniques of discussion to generate ideas to problem solving. All problems were arranged by the researcher. Among the problems were situations regarding the issues of professional burnout in teacher's job, difficulties with pupils' behaviour in class, the organization of creative assembly at school, generation of ideas concerning really integrative activities for pupils, projects of innovative students' index e.t.c.

Conclusions: Comparison results between pretest and posttest filled in by the students in the experimental groups showed interesting changes in particular features of divergent ways of thinking. The fluidity and the flexibility of students' thinking were developed to a high extent. The originality of thinking in the posttest gained low indications. The main reason for this situation appears to be an application in experimental discussions of only practical problems instead of questions in the tests that were highly abstract and imaginary. The second reason of low development of originality of thinking in the posttest was the admitted criteria of assessment of the original idea (the idea could be considered as original if it was used only in one test (1%) and if it was non-stereotypical, based on distance associations, humour itp.

Interesting conclusions were formulated regarding the efficiency of the new techniques of discussion in different problem solving by the student participants of the experimental research. It turned out that students invented a lot of interesting, different and original ideas to solve the problems. The described techniques of creative discussion were implemented by other teacher's educators. The poster includes the opinions regarding particular techniques in categories: advantages and disadvantages.
Professional development of teacher educators through boundary crossings in German teacher education

Maya Zastrow, Friedrich-Schiller-Universität Jena, Germany

Abstract
Meanwhile field experience is an integral part of teacher education within university curricula. Research has shown that the quality of guidance and mentoring (by teacher educators) students receive during their field/clinical experience is crucial for their professionalization (Gröschner & Seidel, 2012). Therefore, it is necessary to focus on teacher educators and provide them, too, with training regarding their professional development (PD) in order to ensure that they can support students before, during, and after their clinical experience more effectively. Against the background that, in Germany, three institutions - universities, seminars[1], and schools - are involved in the teacher education system, the PD of the respective teacher educators at the three different levels is a particular challenge since there is a lack of cooperation, networking, and interaction between the three. As an undesired result of this, students perceive a gap between theory and practice as well as between their academic education at university and the input they receive at the seminar and school levels (Holtz, 2014). Therefore, teacher educators not only have to guide and mentor students during their clinical experience, but they should also actively promote bridging the ‘theory-practice’ gap in German teacher education.

In order to address this challenge we developed a PD program at the University of Jena (Thuringia, Germany) entitled ‘Educating the Educators’, bringing together educators from the three different levels to share their specific expertise at eye level. In total, three PD-cycles are planned (first cycle started in fall 2015) with each cycle lasting for one year and comprising ca. 20 participants from schools/seminars and ca. 10 teacher educators from university. By the end of the program, all German school subjects will have been covered. Following Ken Zeichner (2012), we have established, ‘third places’ in order to cross institutional boundaries as well as to create more professional collaborations with ‘greater social equality’ (Zeichner, 2012, p.12).

‘Educating the Educators’ wants school subject-specific groups of university, seminar, and school teachers to gain knowledge about and become more aware of their respective educational contexts. To arrive at this goal, school/seminar teachers observe and teach in university, while university teachers observe and teach in school. The ‘connecting’ task for the participants from the different levels of teacher education is to (1) plan, (2) teach, and (3) reflect university courses and school lessons collaboratively by applying the ‘Content-focused Coaching’ method (Kreis and Staub, 2011). As a result, university, seminar, and school teachers are ‘acting as resources for each other, refine their teaching and foster professional habits of mind’ (West & Staub, 2003, p. 2).

The poster presentation will cover insights gained during the first cycle of the PD program with teacher educators working together in third places and first empirical data. We conducted guideline-based interviews with $N = 19$ participants in order to assess their perceived motivation, satisfaction,
and benefit after the first half year of the PD program. We also gathered information about their beliefs concerning professionalization as well as teacher education by applying the structure-formation-technique (Groeben & Scheele, 2000). It will be discussed how far ‘Educating the Educators’ can improve the theory-practice-conjunction within teacher education, increase cooperation between the three levels, and empower teacher educators to guide and mentor students during clinical experiences more effectively.

[1] In order to complete teacher education in Germany, students must work between 15 and 24 month as trainee teachers at a school. Specially trained teachers in an institution called ‘Studienseminar’ guide and mentor them.

References
A case study on the improvement of reflection via micro-teaching in pre-service teacher education: Focusing on student's reflection while observing other teachers' micro-teaching

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RDC: Professional Development of Teacher Educators
Subtheme: Professional roles of teacher educators

Reflection

Abstract

Reflection is said to be important in the field of teacher education. Reflection continuously evolves throughout the teaching life. However, the authors deem that reflection needs to be constantly developed in teacher training courses at a minimum because it is the foundation of teacher training. Furthermore, the authors claim that practice teaching plays a major role in the development of reflection in teacher training course in Japan. Nevertheless, the duration of practice teaching in Japan at the present time lasts only about a month, which is relatively a short period of time compared to many Western countries, such as U.S.A., U.K. and Germany. Therefore, in teacher training programs in Japan, micro-teaching has become important with respect to the development of reflection. In such a situation, students are provided with many opportunities to observe the micro-teaching conducted by others. The authors regard that reflections at those moments should be cherished than ever against the current situation in which reflection is considered to be applicable only to the students' own educational practice. Therefore, in this study, we conducted a study referring to the classification of reflection proposed by Kubo & Kihara (2013). The authors conducted this study since experimental study using this theory isn't performed.

The purpose of this study is to answer the following two questions: (a) How does experience of observing micro-teaching by other students influence their own reflection?, and (b) how can the authors reform the strategy that we employ for stimulating reflection on students' micro-teaching in teacher training courses? The authors think this study is contributed to improvement of pre-service student's reflection by resolving these questions.

The authors intended for 22 pre-service students major in physical education. This study was conducted between November 26th, 2014 and February 4th, 2015. The students done micro-teaching one time and observed others micro-teaching five times in this period. In order to reflect on micro-teaching done by others, there is a need to present proposals for improvement for connecting it to their own micro-teaching with their own past experience and existing knowledge (Kubo & Kihara, 2013). Therefore, in this study, the authors coded as reflection the descriptions that were identified as proposals for improvement written in the worksheets in the follow-up conference after observing others' micro-teaching. Then, the authors calculated the percentage of descriptions that contained proposals for improvement over the total number of descriptions in the worksheets. In addition, with respect to the reflection on students' own micro-teaching, the authors categorized the descriptions in the worksheets into four levels depending upon the previous research (e.g., Tsangaridou & O'sullivan, 1994).
The results can be summarized in three points:
(a) Through six times of micro-teaching, a general trend of students was observed that the percentage of descriptions of reflection when the students observed the others micro-teaching of increased; (b) The experience of observing others' micro-teaching did not have an effect on the reflection on their own micro-teaching; and (c) to what extent each student desired to become a teacher seems to influence the results.

The authors further examined the strategies for reflection on micro-teaching in the teacher training course based on the results gained from this study and 'the three-level model of learning' proposed by Korthagen (2001). I hope to share how teacher educator improve pre-service student’s reflection.

References
Abstract
Since the end of the 20th century there is, worldwide, an increased recognition of the importance of teacher educators for the education of future teachers (Cochran-Smith, 2003; Swennen & Van der Klink, 2009). However, the majority of teacher educators does not receive the proper support and mentoring for their professional development (Murray & Male, 2004; Lunenberg, Dengerink & Korthagen, 2014). This is also true for teacher educators in Japan (Iwata & Kushara, 2016).

In Japan it is common that PhD students and Master students work as graduate teaching assistants (GTAs) in teacher education, but until recently they did so without proper education to prepare them for this complex task. The context of this study is a Japanese research university where we started to educate graduate teaching assistants who are going to work as teaching assistants in teacher education.

The purpose of this study is to answer the following questions. (1) What is a good program to develop the expertise of graduate teaching assistants as teacher educators? (2) How do graduate teaching assistants develop as teacher educator? And what are the conditions that will promote or inhibit that development? In this poster presentation we present the results of question 2.

Data were collected from in-depth semi-structured interviews with three GTAs and from the journals written by these GTAs (Merriam, 2002). The interviews were conducted with the support of an interview guide. This interview guide was created on the basis of a consultation with three researchers who are experts in teacher education, and on the findings of previous research.

The results of this research can be summarised as follows. All graduate teacher assistants had to overcome specific concerns and challenges to develop into teacher educators, but they started in three distinct categories: very experienced GTAs, GTAs with some experience and GTAs with no experience placing them at different stages of our proposed curriculum. After following the program the GTAs developed the following expertise: (a) The ability to support student teachers to manage the class, (b) To observe the class from the perspective of the professor (educator) and the students, (c) The commitment to improve both their academic knowledge and practical performance of student teachers, (d) The ability to classify the curriculum based upon the goals of the subject, and to demonstrate how to properly teach a class.

However, a qualitative difference could be seen in the process and direction of the GTAs' development between the students' perspective (as Master and PhD students) and the teacher educators perspective. As Master and PhD students they were conscious of the development of
individual student teachers and as teacher educators they also wanted inspire other teachers to improve their skills (see Staton & Darling, 1989). An important aspect that promotes the development of GTAs is earlier experience in an environment where there is already close communication between teachers, the opposite proves to be a hindrance to their development. When GTAs have experience in an environment where teachers mostly focussed on their classes and their own research but lack communication between teachers, the GTAs focussed mostly on research instead of improving skills needed for teaching the student teachers.

This research offers a better understanding of how GTAs become teacher educators. We hope to discuss with the audience how we can improve the education and responsibilities of the PhD students and Master students who work as GTAs in teacher education to ensure a quality teacher education program that support the development of student teachers and contributes to the improvement the system of teacher education in Japan as a whole.

References
203 – Are Teacher Educators reflective practitioners, and why (not)?

*Paul Holdsworth, University of Bath, Belgium*

RDC: Professional Development of Teacher Educators
Subtheme: Professional roles of teacher educators

Reflective practice / teacher educator

Teachers need to be reflective; they need to start to acquire necessary competences during initial teacher education (according both to academic literature and policy texts). Teacher educators need to possess and model the competences they wish student teachers to acquire. Reflective practice is also a key competence for teacher educators in their own right. But there is little in the literature about teacher educators and reflective practice. This research set out to fill this gap by asking:
- Which kinds of reflective behaviours do teacher educators employ and what are their underlying beliefs and concepts around reflective practice?
- To what extent do these inform and guide their professional practice (including how they teach)?
- What factors really influence teacher educators' professed support for reflective practice?

In this small-scale mixed methods study (undertaken as part of a MA dissertation) a quantitative online survey gathered data from 48 teacher educators in ATEE about their participation in 'reflective' professional activities, and their support for reflective practice. This was followed by a semi-structured interviews with a sub-sample of nine of the respondents to probe their beliefs about reflective practice and the impact of these on their professional practice as well as the factors that influence their very strong support for reflective practice. The resulting texts were analysed using a constant comparative method.

Key findings are:
1 Teacher educators overwhelmingly espouse the principle of reflective practice for their students and, to a slightly lesser extent, for themselves ...
2 ... however, the concept of reflective practice, as used amongst this sample of the profession, is broad and loose.
3 Teacher educators operationalise the concept of 'reflective practice' in a very wide variety of ways (such that it means different things to each).
4 Personal and professional values are more important factors in teacher educators' espousal of reflective practice than empirical evidence about (for example) its effectiveness as an approach.

Implications for the teacher educator profession include:
- the possible need to seek greater shared understanding on how the concept is to be understood and operationalised by teacher educators;
- implications for content and methods in the initial education and continuing professional development of teacher educators;
- implications for the competences of beginning teachers due to the wide variety of conceptions of reflective practice of their teacher educators;
- confirmation of the need for more research into the benefits of reflective practice in teaching and in teacher education.
References


104 – 'Professionalizing from the start': The Jena Model of Teacher Education

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RDC: N/A
Subtheme: Innovation

Professionalizing / university project

Abstract
Social changes bring new challenges for the education system and the teaching profession. But how to educate the best teachers? The poster will introduce the project ‘Professionalizing from the start’ by the Friedrich-Schiller-University Jena (Germany). Following the conference’s main emphasis on innovation the poster covers the question of how teacher education research helps to continuously improve teacher education.

In 2015, the German government and the German federal states signed a joint agreement on teacher education acknowledging that teachers are crucial to the success of the educational system. The overall aim of the program is a) to optimize the structures of teacher education at universities, b) to improve the quality of practical relevance in teacher training, c) to improve the counseling and support of students in teacher training, d) to find solutions in relation to the requirements of heterogeneity and inclusion, e) to develop specialized sciences, didactics and educational sciences and f) to improve the mobility of student teachers and teachers through comparability and mutual recognition of teaching-related degrees.

The program has total funding of 500 million Euros provided by the Ministry of Education and Research (duration: 2015-2018). To receive a share of the funding, universities had to enter a competition. The best 19 projects were chosen in the first round with a further 30 projects in the second round. The poster will present the project ‘Professionalizing from the start’ by the Friedrich-Schiller-University Jena, which was one of the first round-entries. It shows how to tackle innovative teacher education as a university-wide project.

Over the course of the last eight years Jena has developed and implemented its own model of teacher education focusing around a practicum in the fifth or sixth semester of study. Drawing on these experiences, the project of the Friedrich-Schiller-University aims to sustainably profile the Jena model of teacher education and, at the same time, to open up the model for new educational developments. The project is a cross-faculty initiative led by the university’s Vice President for Academic Affairs (Prof. Dr. Iris Winkler).

In more detail, the project has three main sections:
1 Knowledge and Skills: Transgressive Learning Environments (Boundary Crossings),
2 Internationalization, and
3 Dealing with Heterogeneity / Inclusion.
These three sections are executed by eight 'sub-projects' each with its own aims and methodologies. Each is led by one professorial chair. The project is scientifically accompanied by a research and doctorate program and a process control / implementation infrastructure. The poster will give a short summary of the layout, content and proposed outcome of the project. It will be discussed how the current project aims to promote a reflective teacher education and practice within university teacher education and beyond.
Conceptmapping and metacognitive activity - an explorative study into the quality and the students approach of constructing conceptmaps

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RDC: Professional Development of Teachers
Subtheme: Innovation

Assessment for learning / conceptmapping / metacognitive skills

Abstract

Conceptmaps can be used in teacher education, both as a tool for learning as well as a tool for evaluating learning (Koopman et al., 2011; Cañas & Novak, 2008). Conceptmaps can provide insight into the knowledgebase of students (Novak, 1990). While constructing a conceptmap, students apply metacognitive skills and therefor conceptmaps enhance learning processes (Cassata & French, 2006).

An explorative study was executed aiming to gain insight into the quality of conceptmaps constructed by students and the application of metacognitive skills by students working on the construction of concept maps. Six students studying in the master programme Learning and Innovation in Dutch higher education were followed closely during one semester. Data was collected using thinking out loud protocols as students were constructing concept maps. After the semester was finished, semi-structured interviews were held and the quality of concept maps was evaluated by experts in order to answer two research questions:

1. Of what quality are the concept maps constructed by the students?
2. What metacognitive activity takes place during the construction of concept maps?

Data from interviews and think out loud protocols were analyzed using a framework initially constructed by Veenman en Beishuizen (2004), identifying six types of metacognitive activity (orienting, planning, elaborating, executing, monitoring and evaluating). The quality of the concept maps was evaluated on elaborateness by counting the number and percentages of relevant concepts (nodes), the relatedness by counting the number and percentage of relevant relations (links) and depth by counting the number of layers. (Koopman et al, 2011).

Preliminary findings: It was found that student differ in type and frequency of metacognitive activity executed, and some types of metacognitive activity in general more frequently executed then other types. Students also differed regarding the extent to which the concept maps they provided were elaborated. Concept maps also varied in depth and relatedness.

Implications for practice: It is advocated to use scripts, i.e. small protocols for the construction and evaluation of concept maps, to direct and support students on the use of different types of metacognitive activity, as they do no all appear spontaneously.

Originate from practice: Students participating in the course were developing curriculum materials for the use in the curriculum of the schools they are working at daytime. The need was expressed by the teachers educators teaching the course to get more experienced in evaluating and assessing concept maps. As they work with the concept of 'Assessment for learning' they were also interested in how students use concept maps, in order to gain insight into the contribution of concept maps on the enhancement of deep learning.
Question or problem statement I would you like to discuss: Results and implications for practice and further research. Concept mapping is a promising strategy for enhancing meta cognitive activity and deep learning, and can be very useful in teacher education. Teacher-learners should experience concept mapping so they learn to use it as a learning strategy for their learners. However, more should be known about the application of concept mapping in courses.

References
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81 – Study of Teachers' Perceptions of Professional Learning Communities (PLCs)

Botagoz Issabekova, Nazarbayev Intellectual School, Kazakhstan

RDC: Professional Development of Teachers
Subtheme: School-based teacher education

Professional learning communities / teacher experiences / teacher perceptions

Abstract
Since 2008, when the first Nazarbayev Intellectual schools (NIS) appeared, many changes have occurred in the educational system in Kazakhstan. With demands to meet both national and international standards, teachers are expected to incorporate appropriate methods in teaching. The establishment of Nazarbayev Intellectual schools in Kazakhstan pushed the senior managers of NIS to set up new requirements not only for the level of teaching but also for sustainable professional learning of teachers. One of the initiatives to make teaching practice more effective was to create professional learning communities.

Professional learning communities (PLCs) are not a new trend in today’s education, but they are gaining more interest in Kazakhstan, especially in the context of NISs. Different professional learning communities operate in NISs dealing with such topics as action research, lesson study, teaching talented and gifted students and others. These PLCs are oriented to group teachers with the focus on improving teaching and students' learning. Needless to say, teachers are expected to be a part of these learning groups. Teachers are involved in various PLCs; however, some educators have no choice but to participate due to the fact that it is obligatory. Since PLCs are believed to be a necessity to promote students learning (Dufour, 2004) and are designed with student learning as the primary focus (Hord, 1997), the school is aimed at developing professional learning communities through building a collaborative culture. Teachers are to work and learn together in order to improve teaching and learning processes. While participating in PLCs, teachers face challenges such as lack of time, lack of motivation, inappropriate vision of PLCs and formal attitudes regarding participation in them. What the role of PLCs in schools is and how teachers perceive them are not explored widely in Kazakhstan.

The implementation of professional learning communities has been noted to be the most promising strategy for improving and sustaining student achievement (DuFour, 2007). Today, within the NIS context, such PLCs as action research and lesson study; teachers are involved and expected to grow professionally through developing research culture with the center on students' learning. Like any new school initiative, there are arguments for and against a new way of teaching and learning. Teachers are to reflect on their practice, define issues and problems which need to be addressed in order to improve both teaching and learning processes. However, the process of professional learning communities does require changes in the way teachers work. Traditionally, schools in Kazakhstan have been characterized by teacher isolation, whereas DuFour (2004) states that one of the core factors of effective PLCs is teacher collaboration.
In the context of NIS around Kazakhstan, where professional learning communities such as action research, lesson study and teaching gifted and talented students have been implemented, teachers become part of them; however, not all teachers do implement changes in their practices since for some participation in PLCs is necessary due to school requirements, attestation or other personal reasons. Therefore, the school tries to make the work of PLCs effective and sustainable through promoting collaborative culture and providing the staff with professional development. Teachers are welcome to be part of any professional learning community; however, reflecting on my practice as a coordinator of action research community, there is an issue of mandate and mostly, teachers do have to join a PLC.

The purpose of this qualitative study is to explore teachers' perceptions of professional learning communities. The research is aimed to address the following research question: How do NIS teachers perceive professional learning communities in their school?

References
DuFour, R. (2004). What is a 'professional learning community'? Educational leadership, 61(8), pp. 6-11.
115 – Dance's pedagogical training program for school-based teachers: Using discrepancies in the amount of dance teaching career as a clue

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RDC: Professional Development of Teachers
Subtheme: School-based teacher education

Dance education / dance teaching career / school-based teacher

Abstract
Dance education has been thought to enrich a human life (Mirus et al., 1993), and despite its various positions taken (categorized as physical education or art), it has been introduced to a school education in most countries. McCutchen (2006) insist that the basis of dance’s pedagogical contents consist of learning (a) dance performance techniques, (b) the creation process, history, culture, and knowledge of dance, and (c) the analysis and criticism about dance performance. Furthermore, Kassing et al. (2003) pointed out that dance education should concentrate on its learning process rather than the performance itself. These facts imply the necessity to implement a training program in which teachers can develop their pedagogical skills of dance that they can utilize in their daily class. In addition, dance education is subsumed under physical education in Japan and has been categorized into the following three dance types: (a) creative dance: to seize an image, (b) folk dance: to seize a history and tradition of the dance, and (c) contemporary rhythmic dance: to seize a rhythm of the music. In short, it can be inferred that conducting this study will enable us to understand more concretely why teachers worry about dance education in school. It was assumed that teachers’ pedagogical skills of dance are correlated with their dance teaching experience.

The purpose of this study is to propose a training program to develop teachers’ pedagogical skills of dance utilizing their different amount of dance teaching experience. This study tackles the following two contents: (1) worries regarding teaching dance, and (2) expectations for teacher training in the future.

A questionnaire was created in order to investigate the problems that Japanese elementary and junior high school P.E. teachers have been facing reading their pedagogical skills of dance. A questionnaire was distributed to 156 elementary and 84 junior high school P.E. teachers. Among 21 items of typical problems that teachers have, they were asked to choose three and number them in the order of their concerns. The data were analyzed based on their years of the dance teaching experience, using SPSS Statistics 17.0. In addition, they were asked to write down their expectations for teacher training in the future, whose data were analyzed through Text mining.

The results show that ‘the five year experience’ can be considered as a borderline concerning the worries that teachers have toward dance education. To be concrete, if the teacher has taught dance less than five years, ‘knowledge of teaching materials’ about creative dance and contemporary rhythmic dance was their main concern. On the contrary, those teachers with more than five years of teaching experience of dance tend to worry about ‘increasing an incentive to learning’ for all dance types. The details on the contents of the future training program will be recounted at the presentation.

I hope to share the method of dance education from all parts of the world.
References

An introduction of a teaching theory called 'Manabiai (Co-Learning)' and its effectiveness in teacher education

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RDC: Professional Development of Teachers
Subtheme: School-based teacher education

Japanese education system / Manabiai (Co-learning) / secondary education

Abstract
The main aim of this study is to introduce a totally new teaching theory called 'Manabiai (Co-Learning)', which is developed and now rapidly spreading in Japanese elementary and secondary education. The study also reveals how 'Manabiai' affects the professional development of teachers. According to PISA results (OECD, 2012), the students in Asian countries including some cities Hong Kong and Shang-Hi outperformed the rest of the world. Its result is often cited to explain why Japan succeeded in producing diligent people, who have helped to drive the rapid economic growth since the mid-1950s. Meanwhile, the Japanese education system has been constantly criticized due to the students not being given critical thinking and problem solving skills, which are needed in order to succeed in the post consumerist society where creativity and problem-solving skills of the people are vital to further economic growth. Furthermore, traditional Japanese teaching style is often criticized by the Committee on the Rights of the Child, of causing a lot of stress and deterioration in students' learning motivation (2010). Thus, the Japanese education system is now facing the need for change in order to adapt to these requirements.

This study proposes a recently developed teaching theory in Japan called 'Manabiai' (Kiryu and Nishikawa, 2003). Its theoretical format is as follows:

To achieve the study goals for all the students in the classroom (no one left behind)
To maximize students' collective intelligence
To leave the learning process to students' own choice (teachers set the study goals, assess their performance and arrange better learning environment)

Through 'Manabiai' class, students acquire better social skills to collaborate with people in various backgrounds and successfully establish rapport. After practicing this theory, teachers mainly monitor students' learning in the classroom and spend more time on their self-reflection. Their attitudes toward teaching are shifted from teacher-centered to student-centered and this will educate teachers to let students become more autonomous learners with high academic performance. Since 'Manabiai' is mainly conducted by high school teachers in Japan, this study analyzes three teachers' lesson practices and verifies their effectiveness in regards to both learners and teachers.

The study utilizes a variety of research methods including surveys and interviews with three high school teachers and their teaching reports, as well as students' outcomes and questionnaires. Data are explored with four standpoints: The reason the teachers implemented 'Manabiai', students' development in conception and behaviors, teachers' development in cognition and behaviors, and changes in students' academic achievement.

This study underlines those three teachers who challenged the Japanese traditional Banking Education (Freire, 1968) and started 'Manabiai'. The new theory led their students to realize the effectiveness of sharing study goals. Students started steering the classroom environment for themselves. They also acquired learning strategies individually while interacting and cooperating.
Through managing classes by 'Manabiai', students' academic performance and their social skills remarkably improved. The study results also support that the teaching theory affects the professional development of teachers. The teachers became more focused on students' interaction and constantly monitored the quality of students' learning during the class. They also found the importance of facilitation skills to promote students' learning. Teachers were all quite interested in curriculum syllabus development and carefully referred to the Course of Study (Japanese National Curriculum) whenever they made a teaching plan.

This study reports that the teaching theory 'Manabiai' requires 'mentors' as teachers instead of 'trainers' and by running classroom with this theory, teachers will conduct self-reflection spontaneously. 'Manabiai' flowers teachers' alternative competency which enables their students to become autonomous learners with the ability of meta-cognition.

References
Does participating in an innovative introduction program for novice elementary school teachers matter?

Emily van Gool, Fontys University of Applied Sciences, the Netherlands

RDC: N/A
Subtheme: School-based teacher education
Elementary school / innovative introduction / participating

Abstract
At the start of the career development of novice elementary school teachers, it is important to support these teachers to comply with three development tasks. The first one is the socializing in the school and the class. The second is developing their professional identity as teacher and the third is developing the specific knowledge and skills.

It is a common fact that guidance of novice elementary school teachers is a critical success factor in the first stage of their careers (McIntyre, Hagger & Wilkin, 2005). The effect of the guidance depends on the duration and intensity of the induction program (Ingersoll & Strong, 2011). There is however little evidence that shows how the professional development of the novice is formed practically within a guidance project.

In the guidance project ‘breakthrough-project Limburg’ a specific form of guidance is included for each part of the three development tasks. The first task is the guidance at the workplace that is focussing on direct practical guidelines. The second task, the teacher contributes, with help from coaches, to the professional development of personal learning targets. In the last task the development of specific knowledge and skills will be addressed, carried out in group context at the teacher training institute, such as dealing with differences, yield-oriented support, parent involvement and group behaviour (bullying). The three targets are established in the job profile after three years.

The research question is: Does the guidance project contribute to the professional development of novice elementary school teachers?

The set-up of the investigation is based on triangulation (Gerritsma, 2012) with quantitative and qualitative data collection methods and on an experimental group (with a guidance program) and a control group (without a guidance project). The quantitative data will be collected with a questionnaire regarding the influence of wellbeing (Deci & Ryan, 2002), self-efficacy (Schyns & Von Collani, 2002) and employability (Meijers & Wardekker, 2001).

The qualitative data will be collected through semi-structured telephone interviews about the true guidance and what that has contributed will provide. There will be ten participants interviewed: five participants of the experimental group and five participants of the control group. We assume that the guidance project will influence the three tasks and positively impact the growth of the teachers from the moment of graduation.
The preliminary results, based on the questionnaire (n=60) show that the self-efficacy of the novice is influenced by the guidance. The results based on the interviews show that the part of the guidance which is focussing on the knowledge and skills is the most powerful.

The conclusion till now is that the guidance on the three tasks will be effective. It matters. It is important to discuss the fact that there are no uniform experiences and which kind of guidance is needed to deal with that fact.

This investigation fits perfectly with the theme of the conference. After all it is important to educate and coach the best teachers in their career so that they are competent, develop a sense of satisfaction and will retained within education.

The question is however, which activities of the different guidance forms cause an effect on the basic needs of the participants and in which of the guidance forms? We will ask the attendees to split up in three groups to supply the different guidance forms with possible activities that have occurred. The three guidance forms will be offered visually with the request of the attendees to react to post-it notes of the different forms.
Parallel sessions 3

84 – The Problems and Challenges That Teacher Educators Face in Japan

Kazuhiro Kusahara, Hiroshima University, Japan

RDC: Professional Development of Teacher Educators
Subthemes: Professional roles of teacher educators

Japan / teacher educator / teaching assistant

Abstract
This symposium aims to discuss the problems and their challenges that the institution based teacher educators face in Japan. There are two main career paths of becoming institution based teacher educators in Japan. One is an academic PhD route and the other is a practical experience route. Teacher educators of both types have been expected to utilize their own experiences. However, the programs for educating teacher educators have not been focused on using them. Our discussion basically highlights the Japanese context, however it would be productive opportunities for European teacher educators to reflect on their own system and implementation through interactive comparative studies.
For achieving the aims above, we organize three presentations.
The first group discuss about the in-service teacher educators' 'identity' and its differences. This presentation will show you the philosophical, strategic gap as well as relation as between outstanding 2 types of Japanese teacher educators. The second focuses on doctoral students 'professionalism' as teacher educators and its change. It will show you the chorological and qualitative effect of their experience as Teaching Assistant in social studies methodology class. The third suggests some agendas for solving the gap of teacher educators, and the special programs to candidates, which has been implemented at Hiroshima University.
In this symposium, the coordinator consistently bring up the following question; 'Are the problems and challenges that Japanese teacher educators have SPECIFIC or GENERAL?' This question will be helpful not only to encourage the audience to generate new hypotheses on the roles and professional development of teacher educators, but also to reflect on their own experience with reference to the western/eastern perspectives. Therefore this symposium will deeply involve the theme of ATEE annual conference 'the professional roles of teacher educators'.

Presentation 1: How teacher educators in Japan grasp their identity: comparison between research-driven and practice-driven teacher educators?

The aim of this study is to attempt to answer the following questions: 1) How do institution-based teacher educators in Japan design their classes? ; 2) How do they recognize their role as teacher educators? ; and 3) What are the challenges and issues that they face?
Anja Swennen et al. (2008) note that the transition from teacher to teacher educator can be rewarding but also stressful. Beginning teacher educators want to develop their knowledge and skills; such as professional knowledge and language, solutions for personal problems and difficulties, professional confidence, and individual teaching style. Although beginning teacher educators need various layers of support and encouragement, the induction of teacher educators is virtually non-existent in most countries of the world. In addition, there are a lot of researches about professional development of teacher educators, but few about their background how they become teacher educator.
The research goal is to examine how Japanese university-based teacher educators adapt themselves to the university classes, particularly method classes. The problem behind this research is limited number of the empirical research focusing on the different background of teacher educators. A qualitative orientation guided the study’s design and implementation. The data was gathered from eight Japanese university-based teacher educators, who were picked from various teaching and researching background such as the number of year that they have taught and the type of university. Data were collected through a variety of research methods and sources: interviews with the teachers, classroom observations and materials. Analysis was conducted in an inductive way. Data analysis included within-case and cross-case analysis.

This presentation highlights to compare practice-driven and research-driven teacher educators, especially focusing on teaching and researching background of the samples. In terms of the foundation of their classes, practice-driven teacher educators emphasize their own teaching experience, while research-driven teacher educators focus on the experience when they were graduate students. With regards to the role of teacher educators, practice-driven teacher educators heavily focus on the practical aspect, while research-driven teacher educators focus on philosophical aspect.

We summarize two main conclusions. First, the criteria of their class would be based on their individual experience. Second, teacher educator seemed to recognize their role in various way. Some of them focused more on practical aspect, while other emphasized philosophical aspect. The researchers hope that teacher educators could recognize the importance of exchanging their ideas of practice to relativize their understanding based on individual experience.

At the end of this presentation, the presenter gives following questions; “Do you find the similarities or differences of your country in relation to the problems which the Japanese teacher-researchers face?” “What kind of opportunities that we should provide to the diverse background of teacher educators for exchanging and sharing?” “Which standards of teacher educator is necessary to examine their practice? How should the standards be developed? By whom?”

For contribution to the annual conference, our research is concerned with the perceptions of teacher educators about their practice in method course, particularly, roles of teacher educators, challenges and criteria and foundations. It could be link to the ATEE annual conference theme of “professional roles of teacher educators.” We hope that the researchers will argue that meta-cognition of their practical experiences is important, and meta-cognition of viewing problems from diverse perspectives. This study implies that increasing the opportunities to exchange the ideas between the teacher educators is crucial for their professional development.

**Presentation 2: How young doctoral students grow as teacher educators in Japan: from the three cases of teaching assistants in social studies methodology class?**

Since the beginning of this century the realization of the importance of research concerning teacher education has spread all over the world (Darling-Hammond, & Lieberman, 2012) and there have been policy recommendations regarding the quality of novice teacher educators in Europe (European Commission, 2014). However, the majority of teacher educators does not have the proper support and mentoring for their professional development (Gallagher et al., 2011). This is also true for teacher educators in Japan (Iwata & Kusahara, 2016). In Japan, it is common that PhD students and master students to engage in the undergraduate class as teaching assistants (TAs) in teacher
education, but until recently they did so without proper education to prepare them for the complex task to educate and supervise teachers.

The purpose of this study is to answer the following two questions. (1) Regarding the PhD course social studies students in the research oriented university, how do we design a special program to develop their expertise as teacher educator? (2) How can the PhD course social studies students who have experience as TA develop as teacher educator? And what are the conditions that will promote or inhibit that development?

We have conducted research using the following methods and data. Data was collected from semi-structured interviews with the 3 GTAs (Merriam, 2002), and from the journals written by 3 GTAs. The interviews were conducted, with showing the interview guide to the subject. The interview guide was created on the basis of a consultation with 3 collaborative researchers (specialists in curriculum and instruction), and on the findings of previous research (Patton, 2003).

The results of this research can be summarized in three points: (1) Whilst overcoming their concerns and challenges, the TA developed into teacher educators in three distinct categories. (2) In the result, they had developed the following expertise: (a) The ability not only to help manage the class, and but also to observe-reflect the class from the perspective of the professor and the students, (b) The commitment to improve both their academic knowledge and practical performance, (c) The ability to analyze the curriculum & instruction based upon the goals of each school subject, and to demonstrate how to apply them to the class. (3) However, a qualitative difference could be seen in the process and vector of the TAs’ development between the researcher’s perspective, which is conscious of the individual, and the teacher educator’s perspective. We should reconsider the professionalism and responsibilities of the PhD students at the research oriented university in order to ensure their students a good education and improve the system of education as a whole.

Presentation 3: How we support prospective teacher educators in Japan: a model of preparing future faculties at Hiroshima University?

This presentation firstly introduces the audience an effort Graduate School of Education of Hiroshima University has been making to train prospective teacher educators; and secondly, discusses issues raised from its experiences, especially on difficulties that prospective teacher educators have. To fulfill the second aim, the author reviewed articles written by PhD students who participated in the program, which will be explained below as a first-half of the presentation.

The peculiar characteristic of this presentation is, compared to those anterior, the specialty of PhD students is on Educational Foundation area such as: Educational Philosophy, Educational History of Japan, East Asia, and Western Education, Sociology of Education, Educational Methods (Pedagogy), Social Education, Educational Administration and Finance, Comparative International Education, School Administration, and Early Childhood Education. This means, these participants research on educational theories which does not directly influence to subject –specific- practices at schools. Moreover, this tenuous connection between their research area and PRESET subjects they are often required to teach after being involved in a faculty, is a cause of difficulties that future teacher educators will confront with.
The Certificate Program for Preparing Future Faculty in Teacher Education (PFFiTE), established in 2007 in the Graduate School of Education, is designed to meet the demands mentioned above, as well as is within the reform framework of postgraduate education at Hiroshima University.

PFFiTE is a 3-year program, and is optional. Taking in its sights the properties of general subjects in PRESET curriculum in Japan (e.g. Educational Thoughts, Teaching Methods of Moral Education, Pedagogy, etc.), the PFFiTE aims to train abilities so that:
(1) in addition to solid research capabilities, he/she can instruct and educate undergraduate students who want to become initial, primary and/or secondary school teachers; and
(2) he/she can deal appropriately with clinical practices at educational institutions involving tertiary education.

Curriculum is comprised of three activities. The first is research on teacher education for undergraduates, especially PRESET curriculum and its teaching. The second is teaching practicum applying Lesson Study. The third is making portfolio. Additionally, but optional, during these 3 years participate graduate students implement joint research about PRESET.

Among several outcomes and challenges that the PFFiTE raised, we determined an important issue for training prospective teacher educators by reviewing articles and reports written by participated PhD students (and most of them are now working as University-based teacher educators). That is: How can they (prospect teacher educators) form the bridge between the academic theory and class practices at universities?

This issue appeared as a confusion in which stance should they adopt, as a (critical) researcher or an (policy-conformable) educator. If one puts emphasis on the former, he/she may educate undergraduates too much critical toward educational policies, which might lead future school teachers in direction of antigovernment bias. If one puts emphasis on the latter, he/she may just explain policies or what is written in texts and legal things, and may fail to train future schoolteachers to be able to see through the essence in the matter. In short, prospective teacher educators should confront to find what should be leaned by future school teachers, and to re-organize the theoretical things they have gained into the contents for it.

This confusion is as cognitive conflict as a scholar at the same time moral struggle as an educator that each prospective (or fresh) teacher educator should have charge of and resolve on their own. It was found that to study one’s own practice and to deepen and widen one’s own research are the preeminent and practical expedient to sublime it toward better teaching practice. This might be said a scholarship required for teacher educators.

References


79 – Innovation in Teacher Education—Evaluation of a Revised Teacher Education Program in British Columbia Canada: Lessons Learned and Goals for the Future

Shawna Faber, The University of British Columbia, Canada

RDC: Curricula in Teacher Education
Subtheme: Innovation

Canada / evaluation / inquiry

Abstract
The University of British Columbia (UBC) in Vancouver, Canada has a long history in teacher education. A complete restructuring of the Teacher Education Program at UBC took place and a revised program was implemented in September 2012. The redesigned program included innovations such as modifying the structure of the regular university term, a deliberate emphasis on professional inquiry, Indigenous education and teaching English language learners, as well as numerous other course content changes and updates to reflect more current pedagogy and research on teacher education. The new program also introduced an additional practical experience outside of the usual school-based practicum. These Community Field Experiences (CFE) took place with businesses organizations in the community or in different school contexts or locations (for example across the province, country or internationally).

The stated commitment of the Faculty is in ‘... preparing teachers who will be knowledgeable, skilful, flexible, and compassionate members of the profession guided by a sense of social and ethical responsibility in relation to their students and the wider society.’ As well, the faculty is ‘committed to critically examining our practices, and to bringing research to bear upon our programs’. To this end, and to find out if the commitment of the faculty was being met, an evaluation of the UBC Teacher Education program was undertaken. The evaluation focus was largely participant oriented with the goal of understanding the program from teacher candidates' points of view in terms of program quality, program goals and preparation for practicum and becoming a teacher. This was in conjunction with a recognition of the complexity of the program, reflection of multiple perspectives (e.g. other program participants such as instructors), consideration of the program focus and goals and with an overall focus on program improvement. Thus the goal was to examine the program in terms of student satisfaction and quality of outcomes, both of which were framed in an improvement focused approach.

This interactive presentation will begin with the evaluation of the Revised Bachelor of Education Program at UBC in terms of the lessons learned and how we moved forward to take on new challenges with the change in format and course structures. The presentation will also address the aspects of the program that still need work. This then will lead into a discussion on the successes and struggles of others in the field and on what we all have to learn from each other despite (or because of) the diversity of perspectives and contexts. The aim of the dialogue is on informing better teacher education program design and implementation though explicating the various programs in which we all work. The key question is: How do we best learn from each other to create teacher education programs that can meet the goals of the institution and at the same time the needs of the future teachers that we all strive to serve?
This interactive paper presentation is most related to the Innovation subtheme and the RDC of Curricula in Teacher Education. The design, implementation and research on a new teacher education program that has been implemented and evaluated in a setting outside of Europe may add to the knowledge base of those taking place more locally. For those interested in both innovation, curriculum design and delivery, a discussion of the similarities and differences among a variety of educational programs in a myriad of settings can help to improve programs in all of these settings.
Abstract
Beauchamp and Thomas (2009) hypothesize that realizing one's professional identity as a teacher can provoke a sense of agency, empowerment, and even the capacity to transform one's context. In our local district, nearly 40% of new teachers leave the profession in the first five years (Alberta Education, 2013). While the reasons for these departures are unclear, we surmise that many result from disillusionment when teachers feel unsuccessful or unable to achieve their ideals (Clandinin et al, 2012). It behooves teacher educators to attend to the development of professional identity to support teacher retention as well as support more fulfilled and thoughtful professionals.
For the purposes of this paper, we draw on Lamote and Engels' (2010) dimensions of professional identity as a theoretical framework.

Task orientation - includes candidates' views on education, particularly their educational goals for their students, views on discipline, and instructional emphasis
Self-efficacy - identifies how competent candidates feel in areas such as instructional strategies, engaging students, and classroom management
Commitment to teaching - indicates how much the candidates feel connected to and value the teaching profession
Professional orientation - identifies candidates' beliefs in the importance of professionalism, particularly their role as 'extended professional' including collaborations with others

This research is part of a larger project that investigates shifts in candidates' professional identity throughout a new four-year elementary degree program when specific attention is given to identity formation (Korthagen, 2004). See other supporting references in reference list. Each year, candidates wrote a teaching philosophy that was incorporated into their e-portfolios. They also completed a survey using a scale adapted from Lamote and Engels (2010). At the end of their practicum in year 3 and 4, a purposeful sample of candidates participated in an interview with questions that focused upon the four dimensions of professional identity.

Task orientation
Early teaching philosophies showed alignment with many of the progressive ideals promoted in our district but they often read like platitudes. In the final interview, candidates were asked to revisit the original year one teaching philosophy and describe how it had changed. Unlike early platitudes, each candidate gave specific examples of engaging students in authentic learning experiences that inspired them as teachers.

Self-efficacy
Candidates acknowledged that they stumbled and lost confidence when they were not well prepared, but this inspired them to regain the sense of purpose they felt when their students were truly engaged and thinking deeply. Assessment was a common area identified for future growth.
Professional Orientation
Our program has prioritized weekly seminars in schools during practicum to foster communities of practice and rich theory-practice reflections. We are able to achieve this ideal because of intentional cohort placements with 4-6 candidates in each school. Several of the candidates described the powerful support and inspiration gleaned from these seminars when they discussed readings and related teaching dilemmas with colleagues.

Commitment to teaching
Several candidates described a point in their practicum when they experienced burnout but they were grateful for an extended 15-week practicum that allowed them to move past that burnout and 'get back on track.' None could imagine themselves leaving the profession.

Discussion
To invite interaction, we will distribute a variety of key quotes from the interview data and invite participants to interpret these quotes in light of the dimensions of professional identity. Discussion will consider the teacher education pedagogies that support identity development and how to support candidates whose experiences leave them unsure of how to realize their goals, lacking self-efficacy, and lacking a professional community.

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45 – How can Problem-based Learning promote the knowledge, skills and dispositions that characterise good teaching now and in the future?

Russell Grigg, Wales Centre for Equity in Education, United Kingdom, Helen Lewis, University of Wales Trinity St David, United Kingdom

RDC: Curricula in Teacher Education
Subtheme: Professional roles of teacher educators

Critical thinking / problem based learning / teacher education

Abstract
Recent reviews of initial teacher education in the United Kingdom highlight the kinds of knowledge, skills and dispositions that twenty-first century teachers require (Donaldson, 2010; Furlong, 2015; Carter, 2015). Faced with increasingly complex issues in school, among other things trainee teachers need to flexible and creative thinkers, demonstrate a commitment to personal learning and development and contribute effectively to collaborative approaches to problem solving.

The aim of this presentation is to highlight how Problem-based Learning (PBL) can support teacher educators in these areas. It is based on research undertaken with undergraduate and postgraduate trainee teachers at the South Wales Centre of Teacher Education, the largest provider of initial teacher training in Wales. It draws on a mixed methodology of surveys, interviews, trainees' reflective diaries, data analysis and scenario-based session observations.

We outline the background to PBL and discuss some of the challenges in developing this approach within the teacher education curriculum. Some tentative conclusions are drawn about the impact PBL can have in making an effective contribution to preparing the next generation of teachers. The presentation will conclude with an invitation to expand the research to those who are interested in PBL as an approach to teacher education.

References
106 – Student teachers, transnational experiences and attitudes in multicultural settings

Morten Løtveit, Liv Susanne Bugge, Hedmark University of Applied Sciences, Norway

RDC: Education for Social Justice, Equity and Diversity
Subtheme: Professional roles of teacher educators

Multicultural awareness / transnational experiences

Abstract
European schools and kindergartens are becoming ever more multicultural. The student teachers, on the other hand, are largely white, middle class, and of ethnic majority origins. A number of studies have addressed the challenges they face when seeking to adapt successfully to multicultural classrooms and kindergartens. Nonetheless, some student teachers have been reared in other societies, some have lived abroad for a while, and some have experienced to live with parents who originate in other countries. Have such transnational experiences in the students' childhood and/or adolescence had any impact on their multicultural awareness? The main aim of this paper is to address this question. In addition, we consider possible implications of our study for teacher education.

This presentation is a part of a larger study on student teachers and multicultural awareness in which data was gathered using structured questionnaires, resulting in a sample of 388 student teachers attending different educational programmes. Among a number of different questions, the student teachers ticked off whether they had grown up in Norway or not, whether they had at least one parent raised outside Norway, and whether they after turning five years of age had lived for at least six consecutive months outside Western Europe. A negative response to the first question, and/or a positive response to one or both of the two next questions were considered as indicators of transnational experiences. We compared students with and without transnational experiences as regards certain variables dealing with multicultural society and education. The questions we singled out were whether the student teachers would consider to live and work/study for a period of at least half a year outside Western Europe, whether they would consider to work in a kindergarten or a school where the majority of the children had immigrant backgrounds, and what they would think if their own child got a teacher or a preschool teacher with an immigrant background. Most students, both with and without transnational experiences, responded in ways that suggest high degrees of willingness to interact with people of immigrant or non-West European backgrounds. Still, the students with transnational experiences were in some respects not notably more positive than the rest of the students in the sample.

What implications may these findings have for teacher education? First, we may purposefully recruit students with multicultural backgrounds and transnational experiences. This will probably enrich formal and informal educational environments. Second, as teacher educators we may conscientiously and systematically stimulate students to present and speak about their transnational experiences in classrooms and elsewhere. An additional suggestion may be to urge students to spend a semester or more abroad, particularly if it is possible to do so as part of a teacher education program. At the same time, it is worthwhile to note that transnational or international experiences are not by themselves necessarily leading to increased multicultural awareness. In order to facilitate development of multicultural awareness, it is important that teacher educators contribute to advanced levels of reflection about the experiences that students bring along.
Questions:
How do you assess the study we have presented? How do you evaluate our methodology and our findings (as far as it is possible for you to do so)?
What possible implications of our study for teacher education do you consider most relevant or urgent?
171 – Teacher educator as a broker: the partnership among local universities to educate future teachers

Masahiro Saito, Asahikawa University, Japan

RDC: Education for Social Justice, Equity and Diversity
Subtheme: Professional roles of teacher educators

Collaborations / initial teacher education / preservice teachers

Abstract
A variety of roles as teacher educators, for example, teacher of teachers, researchers, facilitators, gatekeepers, curriculum developers, have been pointed out. I dare to say that the role of broker, which connects individuals and groups of pre/in-service teachers to others is most crucial in order to bring more new things among learners.

As well as in other countries, in Japan, the state control has been intensified more with carrot and stick policies under influence of neoliberalism. In school education, prefectural board of education, which is under control of the Ministry of Education, exclusively has authority in employment, in-service teacher training, and promotion of teachers. In such an environment, collaborations and partnerships in teacher education should go toward the efficiency, and ignore needs of individual teachers. Eventually, this oppressive teacher education could overlook voices of those most concerned, students.

In modern education, two notions, ‘autonomy’ and ‘rationality’, have been taken as crucial. People with autonomy and rationality are not produced. In the essence of education, teachers are there as a human being, bringing something new in an educational situation to support individual students to be more autonomous and rational. The goal is not to produce autonomous and rational individuals, but for them to live their own better life.

More Japanese university students suffer lower sense of self-efficacy than those in other countries. They surely have their own core quality (in another word, strength). It is vital for them to gain something helpful in their own view through doing something with others. Their individual development both as a human being and a teacher is achieved through encountering, having dialogues with, and connecting to others.

In 2009, in Hokkaido located in northern part of Japan and suffering depopulation in its' almost all areas, two local and small universities began a mock teaching conference together. Since then, the conference has been held once a year, and students from nine universities had lesson studies and discussed their lessons. This conference stimulates future teachers to do their autonomous reflection.

Five learning outcomes have been pointed out until the fifth conference.

1. Cultivating perception of a teacher (mission, identity and belief as a future teacher)
2. Cultivating perception of teaching (importance of lesson theme, difference between knowing and understanding, consideration in accordance with students' development)
3. Upgrading skills (how to ask a question to support students to cultivate their ideas, how to write on a blackboard, how to utilize handouts and worksheets etc...)
4. Fostering their more awareness toward other subjects and other school categories
5. More awareness of linking between educational theories and practices (Kikuchi, Saito, Matsuda. 2015. pp.82-84)

In this interactive presentation, learning outcomes in the sixth mock teaching conference will be shown. How should we be there to support individual students to cultivate there learning more? More importantly, how should we extend collaborations and partnerships in 'the age of measurement'? As this research and practice is still going, as the first director of this project, ideas, perspectives, viewpoints from audience are very welcomed.

Reference
Classroom research as a tool in developing autonomous language teachers

Katarzyna Brzosko-Barratt, University of Warsaw, Poland

RDC: N/A
Subtheme: Innovation

Classroom research / language teacher education / pre-service education

Abstract
The field of language teacher education has been continuously emphasizing the need to move away from information-oriented teacher education to inquiry based practice in order to support student teachers in obtaining the tools to become more self-directed and self-determining language teachers (Freeman, 2001, Johnson, 2009; Kumaravadivelu, 2012;). Despite these efforts, many teacher education programs struggle with preparing autonomous teachers. Research suggests that Polish teachers, when encountering a problem in a classroom, are not able to employ alternative thinking or to change some of the previously established procedures and activities (Kwiatkowska, 2005). This inability to consider alternative solutions has been linked to teacher education institutions that frequently fail to develop autonomous thinking skills in preservice teachers (Kwiatkowska, 2005). Many institutions continue to focus on transmitting pre-selected, pre-determined and pre-sequenced bodies of knowledge. As a consequence, student teachers are rarely encouraged to construct their own visions of teaching. This study describes the experience of bringing student teachers' attention to the complexity of life in language classrooms by introducing classroom research to the process of educating language teachers.

This case study explored how classroom research (Allwright, 1983; Allwright and Bailey, 1991), as well as exploratory practice (Allwright, 2001) helped student teachers problematize teaching and learning in the language classroom. The data was collected for two years in a language teacher education program. The methods of data collection included observations, interviews with cooperating teachers, student teachers, university supervisors, as well as document analysis such as lesson plans and classroom research projects.

The findings of the study revealed that that the process of introducing classroom research proved to be difficult. This was mainly due to the lack of previous experience in evidence-based practice on the side of student teachers but also that on the side of mentor teachers. It therefore required continuous support. However, the gains were multiple and included among others being able to obtain student teachers' own personalized view of a language learning and teaching. The study showed that student teachers developed interest in solving classroom issues with the means of classroom research, reflection and collaboration.

The enduring question is, 'How to encourage student teachers and then future teacher to continually look for understanding as part of their existing and working life of the classroom.' The presentation will become interactive through inviting the audience to comment on the data excerpts and asking for the audience's experience in the area of involving student teachers in exploratory practice or classroom research.
References
32 – Awareness of One's Own Nonverbal Decoding Skill: New Data on an Old Question

Hans Gerhard Klinzing, Tübingen University, Germany, Bernadette Gerada Aloisio, Directorate for Quality and Standards in Education, Malta

RDC: Methods and Theories applicable in Teacher Education Research
Subtheme: Innovation

Meta analysis / nonverbal sensitivity / self rating

Abstract
Research evidence suggests that understanding socially agreed meanings for nonverbal cues is one of the key competences for effective and appropriate communication (Rosenthal, Hall, DiMatteo, Rogers, & Archer, 1979; Knapp & Hall, 2002). Nonverbal competence has two components: accuracy in nonverbal perceptiveness ('nonverbal sensitivity') and nonverbal expressiveness. Some people are more effective than others in nonverbal sensitivity. Are they aware of their competence? To what extent can they assess their general nonverbal sensitivity and their accuracy in reading nonverbal cues in general and in specific channels? Rosenthal, Hall, DiMatteo, Rogers & Archer (1979) and DePaolo & Rosenthal (1979), tried to answer these questions. They correlated subjects' self-ratings of nonverbal sensitivity with tested nonverbal sensitivity (26 samples, N=655,) and found very weak relationships (range of Mds. -0.06 to 0.10). Their findings clearly show a negative answer to the questions posed.

Purpose of the Studies
This study contributes to findings from studies mostly conducted in the USA with European investigations (Germany, Malta) on individuals' ability to validly and reliably assess their general nonverbal sensitivity and their sensitivity to accurately read nonverbal cues in specific channels.

Research questions
The following research question was formulated:
Are there practically and statistically significant relationships between tested nonverbal sensitivity (decoding abilities) and self rated nonverbal sensitivity in field studies among university students (set 1 of the studies) and samples outside the university (in-service teachers in Malta, students and faculty members of a Southern German college of forestry; high school students, and psychotherapists, set 2).

Subjects
Data from 28 replicated studies (N=1151) collected by the authors from 2004 - 2015 in the context of a project on 'The Importance of Nonverbal Competences in Teacher Pre- and In-service Education' (Klinzing & Gerada Aloisio, 2014) were re-examined. For this report the studies were structured into two sets. Set 1 consists of 21 correlational studies conducted in lecture series and seminars with university students. The second set is made up of seven studies with samples from different populations outside the university context (altogether N=129): in-service teachers in Malta, students and faculty members of a southern German college of forestry, students and faculty members of a Methodist college, high school students and two samples of psychotherapists.
Data Collection
To assess decoding ability, the Profile of Nonverbal Sensitivity (PONS-test, Rosenthal et al. 1979) was administered in all of the studies reported here. This test utilizes a 47-minute black and white film and sound track composed of 220 numbered two-second auditory and/or visual segments.
For the self-rating of own nonverbal sensitivity a six item questionnaire was used. Subjects were asked to rate their own warmth, their ability to understand other people, social situations, tones of voice, body movements and facial expressions (both developed by Rosenthal et al. (1979).
The data sources used in the studies possess sufficient validity and reliability.

Results
Correlations between self-reports of nonverbal sensitivity and tested nonverbal sensitivity turned out as small or very small for all samples, both inside and outside the university context and for males and females (MdRs between 0.12 and -0.11). High similarities between general and specific sensitivity were also registered. These findings from studies in the European context correspond with those reported in earlier studies conducted in the USA.
The significance of these findings and the consequences for educational research, communication practice and the education and training of personnel in interaction-intensive professions like teachers will be discussed in the final paper and with the audience at the 41st ATEE-conference.

References
Assessing the Impact of a Flexible Entrepreneurship Programme within Policy Experimentation at European Secondary Schools

Dana Redford, PEEP – Educar para Empreender, Portugal, Kåre Moberg, Danish Foundation for Entrepreneurship, Denmark, Laura Rosendahl-Huber, Max Planck Institute for Innovation and Competition, Germany, Sergio Leal, PEEP – Educar para Empreender, Portugal, Susanne Spangl, Kirchliche Pädagogische Hochschule Wien/Krems, Austria, Branko Silvar, National Education Institute, Slovenia, Tom Muller, Ministry of National Education, Luxembourg

RDC: Methods and Theories applicable in Teacher Education Research
Subtheme: Innovation

Entrepreneurship education / impact assessment / policy experimentation

Abstract
This paper discusses the findings from an ongoing large-scale policy experiment on entrepreneurship education at secondary school level. The aim of the policy experimentation project is to assess a flexible entrepreneurship programme, which is tailor-made for secondary level of education and include a large-scale teacher-training program. The programme includes various modules, which focus on different aspects of entrepreneurship, such as core skills, culture and civic aspects. Teachers in different subjects can implement these modules, which makes the programme very flexible. In order to test the effect and efficiency of this educational approach, a Randomize Control Trail (RCT) is being performed in Portugal, Austria, Luxembourg and Slovenia. Two versions of the programme are being tested: an intensive version, which includes five short modules, and an extensive version, which includes an additional three modules, which take several weeks to complete.

The RCT is divided into two phases. All participating schools have been distributed into two groups at random. During the first stage, teachers in one of these groups have received training in these modules, as well as elaborate teaching instructions for each of these modules. The teachers will teach the intensive version to one of their school classes and the extensive version to at least one of their other school classes. The schools in the other group will function as a control group. This structure will be the opposite during the second phase. Since we target first year students, the problems with contamination will be limited because the teachers normally follow their classes. The baseline data are collected before the educational initiative is being implemented, in the mid of the semester (mid test) and at the end of the semester (end line). The student questionnaire builds on the validated assessment tool developed in the ASTEE project (see: www.asteeproject.eu & Moberg et al., 2014). Group interviews of teachers as well as individual teacher feedback via survey are part of the programme evaluation. The main focus is on entrepreneurial self-efficacy, but also includes measures of entrepreneurial intentions as well as school engagement and educational motivation. The teacher questionnaire is developed for the purpose of this project and includes validated teaching self-efficacy scales and measures of the school context and teaching approaches.

References
Moberg, K., Vestergaard, L., Redford, D., Cooney, T., Singer, S., Sailer, K., Filip, D. & Fayolle, A. 2014. How to assess and evaluate the influence of entrepreneurship education: A report of the ASTEE project with a user guide to the tools. The ASTEE project - Assessment Tools and Indicators for Entrepreneurship Education
Participation of cooperating teachers in the practicum: a case study of early childhood teacher education in Buenos Aires (Argentina)

Jennifer Guevara, National Scientific and Technical Research Council, United Kingdom

RDC: Methods and Theories applicable in Teacher Education Research
Subtheme: School-based teacher education

Cooperating teachers / Initial Teacher Education / practicum

Abstract
In many countries, the shift towards school-based ITE (Initial Teacher Education) has increased the involvement of cooperating teachers in the practicum (Zeichner, 2012). Recent ITE reforms in Argentina (2007) have recognised them as educators. As early childhood teachers' roles and responsibilities are vast and varied (Harwood, Klopper, Osanyin & Vanderlee, 2013) and therefore difficult to be defined, cooperating teachers could play a key role by sharing their practical wisdom (Lunenberg & Korthagen, 2009) regarding child care and education. However, the 'culture' of ITE institutions in Argentina is still led by a supervisor-centred tradition that undermines cooperating teachers as educators. Thus, this paper addresses the following questions: how do cooperating teachers' position themselves as participants within the early childhood teacher education practicum? How are they positioned by supervisors and pre-service teachers? This study draws upon ethnographic data collected over a two-year period on a single case study of a teacher education institution in Buenos Aires (Argentina) exclusively focused in the training of early childhood teachers. We carried out 120 hours of participant observation –along which we observed 3 supervisors, 24 student teachers and 24 cooperating teachers –and 18 in-depth interviews with supervisors, cooperating teachers and student teachers. Data analysis was approached thematically and helped by the Atlas.ti Software.

We find eight ways in which cooperating teachers' participate in the practicum, considering both their perspectives and those of supervisors and student teachers: (1) passive witnesses -they witness the training process but do not intervene or complain because they do not feel entitled or they are not allowed-, (2) disturbed -their day-to-day teaching activities are disturbed by the presence and participation of student teachers who disorganise their or unfold 'inappropriate' teaching practices-, (3) learners -they learn (or are expected to do so) from pre-service teachers' better and more innovative teaching practices-, (4) collaborative peers -they help (or are expected to do so) pre-service teachers with the implementation of their teaching plans and to 'be ready' for supervisors' observations-, (5) role models -they see themselves and are seen as models of 'good' or 'bad' teaching practices- or (6) teacher educators -they are active participants of pre-service teachers' training process-. These results show that cooperating teachers play different roles in the practicum, but only a few of them stand for educating student teachers; the variations seem to be related to trust between supervisors and cooperating teachers and between the ITE institution and the placement school. When the relationship lacks of trust, supervisors and pre-service teachers might end up in a practicum dyad that tries to 'manage' cooperating teachers, as Maynard (2000) has already suggested.
This research has implications for policy makers and practitioners involved in initial teacher education, since it suggests that policy should encourage educational arrangements that endure partnerships between ITE institutions and placement schools, as well as between cooperating teachers and supervisors. Furthermore, it suggests the need for specific training and paid working hours for cooperating teachers to be able to play a more active role during the practicum.

The question we would like to discuss in the interactive session are the specificities of partnerships in early childhood teacher education. The session will interact with the participants by reflecting on the differences and commonalities between the Argentinean and European contexts and their consequences to find ways of improving teacher education.

References
How is teacher-quality related to mentor-quality?

Gabriella Kovács, Leővey Klára Gimnázium, Hungary

RDC: Professional Development of Teacher Educators
Subtheme: School-based teacher education

Areas to be developed / measuring quality / mentor-quality / teacher-quality

Abstract

Central research goals
The main aim of the presentation is to show what the extent of the relationship between teacher-quality and mentor-quality is. Do positive elements of teacher-quality and the areas to be developed as a teacher appear when we look at the same person as a mentor?
I consider the examination of the above relationship important, because if we find connection between the quality of the teacher and that of the mentor, we can take steps to improve mentor-quality through the improvement of teacher-quality.
Earlier studies have stated that in order to be a good mentor it is essential to be a professionally excellent teacher, but no research has been performed in order to find out the relationship between teacher- and mentor-quality.
In the presentation the term 'mentor' (i.e. teacher educator) refers to mentors mentoring trainee-teachers doing their last part of the university training. Therefore, the present research was neither extended to mentoring experienced teachers nor to mentoring students.

Research design and methods used
In the course of the research three mentors were assessed in their roles as teachers. The methods of assessment were the following: interview, teacher questionnaire, student questionnaire, lesson observation. Having considered the findings of the research I compiled a list of questions that were used to interview the three mentors as well as two of their trainees each about the mentoring process.

Results (research findings)
The research has proved that the elements of teacher-quality reappear at the same person when acting as a mentor, regardless of the fact whether the elements show areas to be developed or are proofs of excellence. My hypothesis, which stated that there is strong relationship between teacher- and mentor-quality, has been verified.
The mentors' professionalism and knowledge was appreciated both in the role of a teacher and a mentor. If the mentors' interpretation of classroom situations were adequate in their role as teachers, the interpretation of situations as mentors proved to be adequate as well.
If the mentors in their teacher-role showed wide variety of teaching methods, that variety appeared in mentoring as well when they showed several different ways of self-reflection to the trainee-teachers. At the same time, if a mentor did not give the students the possibility to voice their opinions in the classroom, the same mentor in the mentor-role was only interested in uttering her own ideas and showed no interest in the trainee-teacher's thoughts.
The research showed that a teacher with emotional-relational problems would not be interested in examining the emotional-relational aspects of teaching during the trainee-teacher's teaching practice. However, good relationship between the teacher and the students could serve as role model for the trainee-teachers.
Questions to be discussed
How can the findings of the research be used to improve mentor-quality?
How should teacher educators be addressed after the research: in their roles as teachers or mentors?

Making the session interactive
A certain type of teacher/mentor (from the research) will be discussed. The participants react as teacher educators, fellow teachers or students. Reference will be made to the areas to be dealt with.

Relevance to the ATEE conference
As the research has shown strong relationship between teacher- and mentor-quality, the findings could be exploited to improve mentoring, since improvement in the elements of teacher-quality would probably induce change in the aspects of mentor-quality as well. The extent of that change could be revealed by another research. Thus the topic is related to the subtheme ‘School based teacher education’ as the mentors or teacher educators are also practising teachers, the process takes place in schools.

References
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29 – Design principles for student teachers' deliberate practice

Larike Bronkhorst, Utrecht University, Maaike Endedijk, Twente University, the Netherlands

RDC: Professional Development of Teacher Educators
Subtheme: School-based teacher education

Deliberate practice

Abstract
Aims

Student teachers consistently report to learn more about teaching from their practicum, than from the classes they attend at the institute (Grossman, et al. 2009). This is interesting, as learning during the practicum is often left to chance (as is also noted in the conference School-based teacher education theme description) or addressed in terms of how schools can provide a powerful learning environment. In contrast, when we look at the student teachers themselves, we find that while their learning during the practicum is at least partly unplanned (Tynjälä, 2008), some student teachers appear to be able to regulate their learning in school practice in such a way, that they learn more from teaching than others (Oosterheert & Vermunt, 2001). This resembles what - based on a long line of research on expertise development - has become known as 'deliberate practice' (Ericsson, 2004): the continuous progressive refinement of core professional activities, that are intended to foster either the performance of a teacher and/or of his student(s), building on contextual affordances. Generally, deliberate practice is defined by four characteristics: it is an activity that is 1) designed for self-improvement, 2) is repeated to enable successive refinement, 3) coupled with immediate, informative feedback and 4) requires significant effort and concentration, more than other activities.

Research question

In previous studies, we have explored the content and context-specific characteristics of deliberate practice for student teachers and formulated seven design principles for fostering deliberate practice. As these design principles reflected institute teacher educators' expertise, while student teachers' deliberate practice tends to take place at schools, in this contribution we explore the question: how can student teachers' deliberate practice be fostered, according to school-based teacher educators?

Methods

We held thirteen open, in-depth interviews with school-based teacher educators, locally recognized for their expertise in supervising student teachers. Transcribed interviews were content-analysed qualitatively and emergent themes were subsequently compared to the results of earlier studies.

Findings

Our analyses indicate that there is a great deal of shared understanding about how deliberate practice can be promoted. Based on the different studies, the following design principles can be advanced, which educators can use to design their supervision (and which will be explained and explored in the session): Explicate student teachers' theories of practice, Promote anticipatory reflection, Require student teachers to draw on pupils for feedback, Support creation of powerful learning context, Strive for realistic professional development, Explicate teacher education pedagogy and Teach about learning to teach.
**Implications**

Using these design principles can complement existing supervision practices, which are typically directed at (retrospective) reflection (Conway, 2001). To make the session interactive, we would like to discuss the (im)possibilities of these design principles, as both the institute and the school-based educators noted some preconditions that needed to be in place, before student teachers’ could develop deliberate practice. These included the mastery of basis teaching routines and establishing a good supervisory relationship (in short time).

**References**


70 – Teacher perceptions of the roles of their wholly school-based in-service educators

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RDC: Professional Development of Teacher Educators
Subtheme: School-based teacher education

In-service learning / professional development / teacher educators

Abstract

The theoretical framework for this study is based on a model of the teacher educator's role developed from empirical data, published in the ATEE Journal 2015. The analysis of teacher educators' roles reported in the journal took place in the present school context and led to five underlying factors being posited as essential elements of a teacher educator's role. The school's teachers (N=243), both local and international, had at some point received in-service professional training from these same educators. The model analyzing the role of in-service educators' in a school of English language in Turkey was submitted to these trainees for validation.

This research extends the previous research into the role of the teacher educator by seeking to confirm the five factor model of the theoretical framework from the perspective of the actual teachers who were trained at the hands of the educators on whom the model was based. The research seeks to validate the model by using a mixed methods design within a largely interpretative paradigm. Quantitative data were gathered using a survey on the in-service educators' professional role, designed around the five factors from the earlier model. Teachers who underwent in-service training in the School of English language at the hands of the same educators responded to the survey (N=190). Responses were statistically analyzed using ANOVA, factor analysis and cluster analysis. The quantitative analyses were followed up with purposively sampled interviews with 7 teachers, national and international, representing a cross section of the teaching population. The outcome data from interviews were analyzed thematically and combined with the statistical data to build theoretical insights.

The results showed no significant difference in the importance attached to in-service educator roles in general across the population surveyed. In-service educators were valued highly. Cluster analysis revealed expectations of teacher educators' roles varied across the population in relation to the five factors in the model. It was seen that level of experience was a variable that affected teacher educator role expectations, as did the cultural background of staff. Statistical evidence supported the importance of trust in educator trainee collaboration, supported and corroborated by data from interviews.

The conclusions once more highlighted the complexity of the teacher educator’s role was in which interventions such as coaching and personalized approaches were appreciated differently depending on trainees' previous training history, type of training, and cultural background. The findings underline the complex choices that professional in-service educators face with regard to differentiated trainees, type of training involvement, cultural expectations, and trainee personal preferences. The findings support the model as developed originally, with the five factors underlying the model being clarified further.
The study further points to the challenges of wholly school-based educators who are involved in the training of their peers within the same context. School-based training models are being pondered and enacted as part of meeting the high demand for teachers being experienced in certain countries, and of providing effective in-service training to a fast changing profession. The conclusions reached here offer potentially important insights for the appointment of in-school educators, and for the eventual professional development of those same educators.
68 – Mentoring and professional growth
Magne Skibsted Jensen, Østfold University College, Norway

RDC: Professional Development of Teachers
Subtheme: Innovation

Mentoring / self-regulated learning / motivation / self-efficacy / human agency

Abstract

Background
In the autumn of 2014, Østfold University College, Faculty of Teacher Education established an innovative partnership through mentoring with a lower secondary school. In the first year, almost all the teachers at the selected school completed a course in mentoring. The next year, the participants used their competence through peer mentoring, to manifest mentoring in daily professional activity. The school's aim was through mentoring, related to develop professional growth and a reflecting culture among the teachers in the organization. Professional growth is represented as an inevitable and continuing process of learning (Clarke & Hollingsworth 2002).

Research aim
How can mentoring contribute to teachers' professional growth?

Theoretical framework
The theoretical framework is based on motivation and self-efficacy (Bandura 1986, Bandura 2010) and self-regulated learning (Zimmerman 1989, Bråten 2002). Bandura's social cognitive learning theory claims that motivation has its origins in cognitive structures and is the main generator to human behavior and actions (Bandura 1986). Self-efficacy is the key to motivation, and motivates for different actions based on experiences. Bandura combines thinking and individual learning with the human ability to interact with their social and cultural surroundings. High self-efficacy is influenced by context and previous learning and can influence behavior, mindset and motivation, which in turn contributes to greater endurance and intensity in the face of new challenges (Bandura 2010). Self-regulated learning means to set goals, develop appropriate strategies, have faith in own abilities and desire to learn (Zimmerman 1989). Teachers, in a lifelong learning perspective, need to develop self-regulatory skills that will enable them to monitor and reflect on the effectiveness of changes they make in their professional role.

Research strategy, methodology and methods
We have used a phenomenological approach to our research material. Phenomenology is the study of the structure and structural variations as experienced from an individual person’s point of view (Kvale 1997). We used an interview guide to gain deeper insight into the connection between mentoring and professional growth. The interview guide shows the qualitative interview’s two dimensions: the theoretical with respect to the relevance of the research project’s aim, as well as the dynamic to create a good interview interaction (Kvale & Brinkmann 2009). Through categorization of the interviews, we decided to focus on self-efficacy (motivation) and self-regulated learning.
Preliminary findings
The empirical data in our survey shows among other things that through mentoring the understanding of colleagues change when the relationship gets different content and a different form. It has an impact on the professional's motivation and self-believe, and the teacher's ability to regulate their skills, and to reflect on their practice.

Relevance to European educational research
We believe our research will draw attention to the opportunities that lie in mentoring to develop professional growth and reflective practice. This project shows that mentoring contributes to both individual and collective learning, and makes way to create a motivational, supportive, successful learning environment in the organization. Self-efficacy and self-regulated learning among professionals is about lifelong learning. Bandura (2010) associates the term 'human agency' to people who are referred to as self-regulating, reflective and proactive. Skaalvik & Skaalvik (2012) call these people 'agents in their own lives'. That means amongst other things that one evaluate their competencies and work strategically and holistic with their tasks. Goddard (2001) emphasizes the collective expectation of mastery as a condition for development. We put more effort and energy in the implementation when we believe in ourselves and believe that we can master a particular task, which in turn strengthens our self-perception.

References
The School Takeover as professional learning at two Teacher Training Programmes - a comparative study

Magne Skibsted Jensen, Kjersti Berggraf Jacobsen, Geir Luthen, Østfold University College, Norway

Abstract

Background
The target for our study consists of two different groups of students at Østfold University College, Faculty of Education. Both groups complete a School Takeover in their programs. One group contains students from the program Practical Pedagogical Studies (PPU). It is a one-year program, which qualifies teachers for selected school subjects at lower and upper secondary school levels, and in adult education. The other group consists of students in a 4 year integrated Teacher Training Education at bachelor level (GLU). This Teacher Training Program consists of subjects, pedagogic, didactic and practice, and qualifies students to teach in lower secondary schools. For PPU the School Takeover are completed early in the program and for GLU in the final year.

Research aim
How does the School Takeover contribute to the students experience achieve knowledge and experience about being a professional teacher?

Theoretical framework
This study is inspired by the theories of Peter Jarvis, based on an expanded understanding of adult learning (Jarvis 2002, 2012). These theories are considered useful in obtaining a deeper understanding of student learning during practice placements. To some extent we also lean onto theories dealing with diversity and polyphony (Biesta 2006, Bakhtin 1984, Dysthe 1995).

Research strategy, methodology and methods
Our overall research strategy is based on the action research spiral (Carr and Kemmis 1986). The spiral’s elementary plan, action, observation and reflection take place through discourse and practice. We have chosen to adopt a phenomenological approach to the data material (Giorgi 1997). The data material consists of individual student logs, logs written by the students during and immediately after the school-takeover. The students are asked to write logs because this form of documentation contributes to a deeper understanding of events through written reflection (Bjørndal 2011).

Preliminary findings
The PPU program has conducted school-takeover for several years and all students involved have written individual logs. The data material which constitutes our findings is from the autumn of 2015. Preliminary findings suggest that the students are concerned with how the behave and how they teach, how to cooperate with their fellow students and the quality of the guidance from the teacher educations. They are curious and eager to get to know the pupils, but they do not put much attention to the pupils learning. They do not seem to be interested in innovative approaches to teaching (Jensen & Luthen 2012) The students from the integrated program (GLU) have just conducted their
school takeover. Their logs related to the school takeover will be categorized and analyzed together with the logs from the group of students mentioned above.

**Relevance to European educational research**

In our efforts to develop a more comprehensive and integrated Teacher Training Education, where the Teacher Training College and practice fields cooperate as equal contributors to students' learning, we have drawn attention to the concept of the third room. The third room describes interaction processes associated with a professionally oriented education. The concept of the third room can be utilized to demonstrate the possibilities that lie in a cooperation between the loosely linked parts in professional education, in which the participants leave their field of knowledge and enter a new one which they have created together (Zeichner 2010). We believe our research on the School Takeover may draw attention to the opportunities that lie in the third room.

**References**


Professional and pedagogical problems and reflections of teachers being active in innovations, developments, and further trainings

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RDC: Professional Development of Teachers
Subtheme: Innovation

Professional capital / reflective thinking / problem solving / innovation

Abstract
The realisation that the effectiveness of an institution is determined by the state of its organisation, its culture, and its level of development achieved in the process of becoming a learning organisation is becoming increasingly common (Fullan, 2006, Mulford, Silins & Leithwood, 2004, ). While literature on the effectiveness of schools is rich (Reynolds, 2000; Scheerens et al., 2003; Creemers et al., 2010; Robinson et al., 2015), there are only few examples of research in the field of teachers' ideas arising from this problem area. Research in the fields of reflective practice and problem solving as well as teaching practice form our theoretical basis. Studies confirmed that reflective practice contributes to the continuous professional development of the individual, and - with collaborative search for solutions - it also supports the development of common knowledge (Schön, 1987; Korthagen 2004; Taggart and Wilson, 2005; Liakopoulou, 2012).

Our one and a half year research aim were exploring professional, pedagogical problems arising in the case of teachers being active in innovations, developments, and further trainings; understanding the reasons leading to these problems; as well as exploring the characteristics of reflection on individual and organisational levels in order to address supporting and hindering factors. Results are interpreted in terms of the professional capital model for a better understanding of the institutional effectiveness.

37 teachers have been selected from a previous large sample research of the Hungarian Education Research and Development Institute. Our methods were professional career narratives, semi-structured interview, focus group discussion. We searched the answers to the following research questions: (1) What characterises reflective practice of teachers and schools as organisations? (2) What are the characteristics of problem solving in the perceptions of teachers? (3) How does the professional capital model appear in the examined institutions?

The results of the study indicate that the teachers' reflection is based on problems in the learning-teaching process. The continuing professional development and the self-knowledge are less important reflective area, they concentrate the sort-term problem-solving and the content of the teaching because their reflective thinking is on the technical level of the Taggart-Wilson's model (2005).

Individuals are left alone in coping the problems; the strengthening of the isolated activity of teachers is typical instead of the consolidation of communities of practice. Some of the innovative teachers assume that those making mistakes certainly reflect in themselves, as well as search for reasons and look for improvement. According to the teachers, the organisation is rather a unity of individuals living side by side and only rarely of groups and even more rarely of communities.
The capital elements of Fullan and Hargreaves' model are indeed present in the organisations, but there is no systematic relationship between them. A lack of learning organisational mechanisms and organisational cultural elements may be observed; however, through these, the elements of professional capital would be able to work in strong interaction and with strengthening each other. Behind the results discussed above there is a chance to understanding the hungarian schools' conditions and possibilities with the aim of improve them. We would like to discuss our results, and the capitals' presence in the schools by questions.
The quest for competence in kindergartens: Strategies for competence development among kindergarten staff in Norwegian kindergartens

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RDC: Professional Development of Teachers
Subtheme: Innovation

Competence / competence development / kindergarten

Abstract
Norwegian kindergarten policy has in recent years shifted towards focusing more on better quality of kindergarten services, which includes an increased attention to the competences of the kindergarten staff. This policy change must be seen in light of the fact that today almost every child below the age of six attends kindergarten. The increased attention to management and organization of kindergartens, as well as the increased focus on customer satisfaction must also be taken into account.
How kindergarten staff views their competences and need for competence development is likely to depend on their working role in kindergarten. Norwegian kindergartens have two types of staff: (1) Formally educated kindergarten teachers who normally hold one of the two management positions in the kindergarten, either as headmaster or department manager. (2) Kindergarten assistants who have various competences but no formal competences are needed. However, many kindergarten assistants have some sort of formal education that is relevant for working in a kindergarten, but these competences varies to large degree. One might predict that kindergarten staff view their competences and need for competence development differently depending on whether one is a kindergarten teacher or a kindergarten assistant, and what management positions one might have in kindergarten.
The focus on quality in kindergarten services in general and the competences of kindergarten staff in particular may affect kindergarten staff in different ways: Kindergarten staff might be more attentive to the quality of their own work, and they might also find a discrepancy between their own competences and the competences needed to do a good job in kindergarten. It might be that kindergarten staff sees the need for some sort of competence development.
Kindergarten staff might not only be attentive to the quality of their own work and their own competences but also to those of their colleagues. Kindergarten staff might also be more attentive to the quality of the kindergarten’s services as a whole. What competence development that is needed in kindergarten depends in this view on the collected competences in kindergarten.
If and how managers of kindergarten focus on competence development among their staff might also be important. If kindergarten staff are motivated and given opportunity to develop their competences this probably increases the chances for actual competence development.
This paper focuses on kindergarten staff in Norway and their potential strategies concerning competence development. The problem of inquiry is as follows: What potential strategies concerning competence development can kindergarten staff develop? The paper has four aims:
To describe potential strategies concerning competence development among kindergarten teachers and kindergarten assistants.
To describe potential strategies concerning competence development depending on what management positions in kindergarten one might have.
To describe how strategies concerning competence development among kindergarten staff are influenced by other external factors such as the competences of colleagues and/or the collected competences in kindergarten.
To describe the role of managers of kindergarten in motivating and giving opportunity for competence development among their staff.
The theoretical framework for this study will be drawn from educational, organizational and management research. By reviewing recent kindergarten statistics and research, as well as official Norwegian kindergarten policy documents various potential strategies concerning competence development among kindergarten staff will be developed.
Matters concerning competence, competence development and competence management in kindergartens are believed to be relevant to European educational research and to the conference subtheme on innovation.
The conclusions in this paper may form as a basis for empirical research on competence development in kindergartens. The conclusions may contribute to the discussion on teacher competence policies and may also have implications on teacher education.
Continuing Professional Development: motivations and effects on teachers

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RDC: Professional Development of Teachers
Subtheme: School-based teacher education

Networking / professional development / teachers

Abstract
Teacher professional development depends upon a wide array of variables that go beyond initial teacher preparation to include a number of planned and non-planned activities in which teachers engage throughout their careers. Thus, it is important to analyse the meaning that teachers attached to their learning experiences in the workplace. This paper presents data from a broader piece of research, funded by Fundação para a Ciência e a Tecnologia (National Foundation for Science and Technology) (PTDC/CPE-CED/112164/2009), which aims to investigate teacher professional development through leadership and collaborative initiatives in schools. In particular, the research questions upon which this paper is based are: What are the motivations of teachers to engage in professional learning opportunities including INSET? What do they learn from them? How do they assess their involvement in professional development opportunities?

A combination of methods was used. This paper presents findings from a nationwide survey to teachers (n=2702) and from professional development courses in which 66 teachers participated. The most important motivations for engaging in INSET and professional development opportunities were improving practice, developing professional knowledge, developing innovative teaching strategies, sharing ideas and experiences with colleagues and progressing in the teaching career in detriment to implementing national policies, developing leadership abilities and performing given roles at school. Data also pointed to the importance of learning networks in fostering teacher professional development. The participants stress key issues such as the possibility of building professional knowledge together, sharing experiences and ideas and enhancing professional motivation and morale through discussions about the teaching profession and the conditions in which teachers work. However, structural and cultural aspects also emerged namely the professional and school culture, the school leadership and the personal and professional values as teachers as key mediating influences on teacher learning and professional development. These and other issues will be discussed further in the paper.
Competence-based teacher education - learning at workplaces
Pirkko Kepanen, Oulu University of Applied Sciences, Finland

RDC: Professional Development of Teachers
Subtheme: School-based teacher education

Competence-based curriculum / on-the-job learning / evaluation of competences / special teacher education

Abstract
Competence-based higher education (HE) is based on the Bologna process and the practical conclusions concerning vocational HE. It tends to provide a means for judging standards and making comparisons possible between educational organizations, developing global workers and enhancing flexibility and adaptability. The principles of competence-based learning are independence of time, work life orientedness and personalization. Implementing these principles makes it possible to learn in a versatile way at work places and make use of the results of earlier acquired learning. The competence-based approach is widely adopted, although it is somewhat ambiguous a conception. It has connections to human resource management. Competence is often conceptualized as the underlying characteristics of an individual or skills, knowledge and attitudes of an individual in this study competence is defined as skills, knowledge, experiences and values needed in teaching. In competence-based evaluation the focus is in demonstrating the skills in authentic environments using various methods. Learning is tightly connected to evaluation and self-assessment.

The first program of vocational special teacher education in Oulu University of Applied Sciences, in Vocational Teacher Education (VTE) is proceeding according to the competence-based curriculum. The teacher students are vocational teachers or vocational untrained special teachers. In the beginning the students do self-assessments. Their competence has developed through their previous studies and work life. In their personal learning plans they suggest how to develop their competence towards the goal, and how studying and work will support each other.

This research is a qualitative case study with a narrative research approach. The aim is to explain vocational special education students’ (N=18) experiences of on-the-job training in competence-based studies. The research material consists of narratives written by the students and their transcribed interviews (82 pages). The material was analyzed by qualitative content analysis. In school-based teacher education learning during the teaching practice is often left to chance, and a conceptual framework may be missing. This view raised the need to explain what kind of educational arrangements help to widen and deepen learning.

The research questions were:
- How do students experience learning, when work and studies are connected?
- What do they learn in teaching practice/ practicum?
- Teaching practice is a separate study course. It can be carried out in one’s own work context or in another educational institute. Every student has a guiding teacher who observes the student’s action. The student plans and reports the practice. Competence should be demonstrated concerning every single objective. The goals to be achieved are described in detail in teaching practice documents.
The preliminary outcomes show that the students regarded the task of self-assessment as significant in recognizing their competences. They had worked as vocational teachers for varying periods of time, but no one of them had earlier recognized their competences clearly. Reflecting on one’s work and skills became an important part of the learning process. In study processes all earlier acquired competences were recognized and acknowledged. Connecting work and studies contributed greatly to the possibility to test and experience the learnt things in practice. Moving from knowledge to learning created the foundation for competence. Competence-based education stressed the nature of the problems included in the education, i.e. the key contents of professional practice.

The learning goals of teaching practice guided the students to pay attention to the key professional requirements of vocational special education teachers. They directed the students to complement their competences if they were found defective.
The reflective journey of the student teacher

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RDC: Professional Development of Teachers
Subtheme: Innovation

Identity / reflective practice / reflexivity

Abstract
This paper is a study into the reflective practice of the student teacher at a university based initial teacher education institution in England. Specifically it investigates the use of reflective practice during the PGCE (Post/Professional Graduate Certificate of Education) year. Reflective practice is encouraged by Initial Teacher Educators (ITE) but how it manifests itself and to what extent it is an important part of becoming a professional teacher is the focus of this paper. Reflective practice is interpreted widely and includes reflection, critical reflection and reflexivity.

The methodological approach adopted is a combination of both feminism and critical realism, known as ‘feminist realism’. A multiple methodology is used consisting of a case study and questionnaire. The case study includes the analysis, over the PGCE year, of six student teacher's reflective practice sheets and a series of semi-structured interviews. The interview data is analysed using Nvivo, Excel and critical discourse analysis. The questionnaire was administered to the whole PGCE cohort of 101 student teachers and is analysed using Edexcel software.

Conclusions drawn from the data analysis highlight the complex environment the student teacher belongs to. Their placements consist of different social fields that impact on their agency. The external structure of Ofsted (Office for Standards in Education, Children’s Services and Skills - Ofsted is required to inspect ITE providers and their compliance to the new curriculum in England) and the internal social fields of competing agents influence, to varying degrees, the student teacher's journey to professionalism. This journey includes having to construct and reconstruct a ‘teaching identity' whilst simultaneously succumbing to the pressures of the various social structures faced in an educational environment.

Finally, a new definition and model of reflective practice is presented which emanates from the research findings.
Abstract
This research aimed to identify primary teachers’ conceptions and practices about science teaching and promote reflection on such teaching. The study was based on the Reflection-Oriented Process, a strategy for teacher professional development based on teaching practice. The main research questions were: How primary teachers conceive, reflect, plan, and carry out science teaching? How they reflect and plan science classes taking into account the Reflection-Oriented Process? Furthermore, how these teachers evaluate their own professional development? Data was collected through questionnaires, interviews, and analysis of class plans. In addition, teachers’ work meetings and classes were video recorded. Data analysis was made by content analysis. Teachers’ ideas about science education were classified into ranging from cognitive approach. Their teaching models revealed inconsistent conceptions about the process of teaching and learning and also with the constructivist orientation models. Teachers’ lesson plans contemplated most pedagogical elements to carry out an investigative approach of science teaching. These plans were analyzed according to an investigative level. Each primary teacher proposed a didactic sequence aiming at reach more complex levels. The didactic sequences were discussed, modified, and applied in the classroom. Livia and Roberta (fictitious names) promoted students' engagement in class, proposing a problem and considering students’ previous ideas. These teachers still presented some difficulties in guiding discussions, which could favor the development of students' understanding and argumentation in class and also applying investigative approach, possibly because they have difficulties in asking questions, exploring the students’ ideas, systematize knowledge and scientific explanations. Therefore, Reflection-Oriented Process was an important strategy for the professional development of these teachers, enabling significant reflections on their own practice as well as the awareness of possibilities of teaching actions, in order to promote an investigative approach in science classes.

This results and conclusions are particularly relevant to be used by teacher trainers. I will present the discussion examples of the formation process and indicators of primary teachers appropriation of the changes and difficulties in doing it.

References
The implications for in-service teacher education of curriculum renewal in school settings

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RDC: Professional Development of Teachers
Subtheme: School-based teacher education

Curriculum renewal / professional development / teacher education

Abstract
The two case studies reported here examine the processes of curriculum and assessment changes within two schools in different countries from the perspective of those experiencing the change and focus in particular on the implications of the change for in-service teacher professional learning. One school was grappling with externally imposed change through government policy requirements, the other through self-impose change through adopting the International Baccalaureate Middle Years Program (MYP) model. In both cases the aim of the change process was to move towards an overtly constructivist approach to student learning, close the achievement gap, develop students’ approaches to learning and their abilities to meet the demands of a more globally integrated world. The research design adopts an interpretative paradigm, utilizing a common approach to data collection in both contexts for the purposes of cross case comparison. In-depth interviews with educators involved in and affected by the changes to curriculum and assessment, viz. heads, coordinators and teachers, explored the processes of curriculum renewal and the implications for in-service teacher professional learning within the two target schools. Data were transcribed, analyzed thematically and submitted to validation by third parties. A model summarizing the comparative learning from the two school contexts was developed, explicating the commonalities and differences found in the data.

The complexities of the curriculum and assessment innovations were apparent in the data, and the analysis brings these to the fore. Seasoned professionals and newer members of the teaching profession faced substantial professional challenges, requiring rethinking and relearning of their roles as educators. The challenges of creating common understandings, the need to reposition the classroom within a different perspective, the demands of working within a collaborative framework, and the stresses on the learning community make curriculum change a redoubtable process for a school and its population of educators.

The presentation will inform participants of the outcome of the analysis and highlight both the challenges faced by those implementing the change, as well as the researchers’ conclusions for the professional development for in-service teachers and school leaders involved in curriculum and assessment renewal initiatives of this nature. The two very different national contexts allow for cross case comparisons and lessons, which extend the relevance of the analysis beyond the two immediate contexts and provide a framework for thinking about such change for those considering or being required to undertake, significant curriculum and assessment innovation.
Contextualized science teaching: do textbooks facilitate teachers' job?
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RDC: Science and Mathematics Education
Subtheme: Innovation

Contextualized science teaching / teacher education / textbooks

Abstract
Students' interest in learning science is a matter of concern in several countries around the world. It has been argued that contextualizing science teaching is a way of fostering students' interest in learning science. Science textbooks should help teachers to contextualize teaching. They could do it in different ways, namely through photographs, problems, history of science, learning activities, etc. However, there is a dilemma with textbooks contextualization: textbooks are targeted to national use and contextualization should be local so that it can be meaningful for students of a diversity of school areas. A consequence of this is that, the same science theme should be contextualized differently in different countries. This research focused on how Portuguese, Brazilian and Mozambican textbooks contextualize chemical reactions in order to find out whether or not teacher can rely on the contextualization they suggest. Thus, chemistry textbooks that are being used in schools, from eight grade to 11th grade (or equivalent) in those three countries were analysed with regard to the contextualization they do and the way they do it. Results suggest that Portuguese textbooks use much more contextualizing tools than the other countries textbooks do. Besides, the contextualizing elements are too general, whatever the country, and therefore may have a reduced added educational value. It should be noted that the learning activities given in the Brazilian science textbooks tend to concentrate on the interrelationship between science and society a bit more than the Portuguese or the Mozambican textbooks do. Therefore, teachers cannot simply rely on the textbooks if they are to put contextualized science teaching into practice. However, textbooks include some bits of information that can be developed if teachers are aware of the relevance of contextualizing teaching. A consequence of this is that teacher educators should find ways of training prospective teachers as well as in-service teachers to deal with contextualized science teaching and to take the most from the assigned textbook with regard to contextualized science teaching.
127 – Exploring Pre-service Science Teachers’ Experiences with Online Collaborative-Argumentative Writing Environment

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RDC: Science and Mathematics Education
Subtheme: Professional roles of teacher educators

Online Collaborative-Argumentative Writing / Pre-service Science Teacher Education

Abstract
Nowadays most students are likely to participate in some form of group writing particularly after a group project during which all students collaboratively create or do something. Writing a collaborative research paper can have many benefits; however, writing in a team may be a stressful and useless process because of different opinions, learning and writing styles and personal relationships. To date, various methods used for collaborative writing through traditional paper-pencil activities revealed both advantages and disadvantages in terms of writing successfully together. However, there has been little research on students’ experiences in a technology-enhanced collaborative writing environment. The purpose of this study was to investigate Pre-service Science Teachers’ (PSTs) experiences with writing their research articles in Online Collaborative-Argumentative Writing Environment (OCAWE). 24 PSTs (18 female-6 male) participated in this study during two semesters. It was aimed to help PSTs develop, conduct and report long-term authentic science projects through two courses for each semester, supported by ‘Scientific Research Apprenticeship’.

After PSTs formed their research team, each team of PSTs decided their team project and made necessary revisions on it based on the obtained feedback from their peers and instructor. Later, each PST team, guided by scientists, experts and practitioners, performed their research in laboratories at university campus and various factories in the city. At the end of the implementation, PSTs were asked to collaboratively write their project reports through OCAWE to send them to an E-journal. In the OCAWE, each PST team wrote their research articles in their own asynchronous discussion forum (ASF) in Moodle using MS Word’s track changes and comment tools for all edits as a small group. Each team of PSTs was first asked to turn on ‘Track Changes and Comment’ features in a blank Word document before they started writing anything in order to see who is changing what in the document and a little balloon if someone makes a comment. When these features were on, all PSTs could easily able to see deletions, insertions and any changes since each PST’s edits appear in a different color in the document. A PST from each team usually began writing in the section of introduction such as literature review, purpose and rationale of their study and uploaded the document to the ASF. Then another team member opened the uploaded document to review what his/her teammate added, deleted or changed in the document. ASF enabled PSTs to engage in a threaded discussion with each other until they accept or reject changes and delete comments in the document step by step. After each small step, he/she saved the document with a new filename in the ASF.

In this study, 8 PST teams used the OCAWE to write their research paper in a different number of steps, ranging from 36 to 128. Semi-structured individual interviews and an open-ended questionnaire developed by the researchers were used as data collection tools at the end of each semester. All qualitative data were analyzed to explore the PSTs’ views of OCAWE using constant-comparative method. Results showed that most PSTs perceived the OCAWE as a beneficial way for
collaborative writing in qualitatively different ways such as encouraging all team members to equally participate in writing task, preventing them from blaming each other and escaping from responsibility and so enhancing intra-team cohesion to complete writing task efficiently. However, a few PSTs stated that a marked-up document could quickly overwhelm with its tangle of additions and deletions in multiple colors. Most PSTs expressed that the OCAWE is very useful for multi-authored document although it sometimes exhaustive environment. It was also found that the OCAWE had a positive impact on PSTs' writing dispositions.
212 – Artistic Research to improve creativity in academic writing

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RDC: N/A
Subtheme: Innovation

Creativity / writing

Abstract

Teacher education is based on educational research, educational theory and educational methods and academic writing with traditional model based thesis. The theses that are produced in teacher education often looks the same and the process seem to be more or less just 'copying'. The students also seem to loose their lust and joy to write. The National Board of Universities studied thesis as a quality evaluation. Many subjects did not pass, because the thesis did not fulfil the goals in the regulation. The aim of this interactive presentation is to discuss challenges and possibilities for artistic research to contribute to the development of a complementary and an alternative artistic theory and artistic methods for academic writing in teacher education. Our main question is: Can artistic research, artistic theory and artistic methods contribute to the teacher students' own creativity, own responsibility, and less use of models in writing academic essays? If the answer is yes, how? The process today to write academic essays have too often similarities with just 'copying' a structure or a model. The discussion in the presentation is a critical monitoring of how academic essays often are developed. The very short presentation consist of a research and development project (a book for teacher in higher education is just about ready at a Swedish well-known publisher) on writing academic essays based more on artistic research. The process of writing academic essays in the project has been built on artistic theory and artistic methods. We give a short presentation of the aim, some examples of artistic theory, our main methodology, results, main conclusions and implication for practice. The main problem to solve is how to get better result of the academic writing with use of artistic theory and artistic methods. The use of alternative models in academic writing is strongly controversial and it is discursive difficulties to discuss cross-disciplinary methodology. The main conclusion is that the students' academic writing turned out to be more creative, the student showed better responsibility for their own essay, and they did not use models or examples at all. An alternative methodology has developed out of the artistic research in cooperation with traditional educational research which is the main result of the project. The main discussion will be on artistic research and the need for more creative artistic methods and alternative artistic theories. The relevance for the conference is to discuss how academic writing can develop and be more creative and fewer stereotypes and fewer models based.

Some information on Swedish artistic research: The higher arts education came in to higher education 1977. Later could teacher in art in higher education conduct research and get doctors degree. Contemporary art had been idea-based with a strong theoretical character. In 2006 the first thesis for the doctors degree in art was presented. Nowadays artistic research are carried out at several universities and national research institutes. The international trend is also strong. However, there is no quite clear definition of artistic research. Research Council’s report on artistic research and expresses: 'Artistic research is based on art as creative form of knowledge and investigative practice. Nearby designations are for example artistic practice-based or practice-driven research, research through art and research on artistic grounds. The research conducted by artistic work with the support of investigative methods and theories which can also be taken from other areas of research.
Reframing mentoring conversations: Using triadic professional dialogue between pre-service and mentor teachers during the teaching practicum to enrich professional growth

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RDC: Secondary Teacher Education
Subtheme: School-based teacher education
Mentoring / professional development / professional dialogue

Abstract

Background/context
The Melbourne Graduate School of Education's Master of Teaching (MTeach) program is a two year postgraduate initial teacher-education course that combines school field experience and theoretical aspects of teacher education, from the outset within a clinical model of teacher education. Each pre-service teacher (PST) is supported by a mentor teacher whose classes they teach. At a group level PSTs are organised into clusters of about 25 across 3-5 schools and this group are each assigned a school-based teaching expert (Teaching Fellow) and a university-based expert (Clinical Specialist) who draw connections between school field experiences and academic coursework. The pre-service teachers are placed in a school for two days a week from week four of the program, in addition to completing a four-week block placement, in that school.

The provision of feedback plays an essential role in the clinical model of teaching and encourages the pre-service teacher to develop as a reflective professional during field experience. Feedback is facilitated through the use of a descriptive lesson observation schedule that mentor teachers complete during the lesson and this is a basis for a post lesson conversation with the PST.

Research goals
Our aim was to investigate how the use of the descriptive lesson observation schedule and the conversations that arise from its use, might be enhanced if a three way professional dialogue was facilitated between the PST delivering the lesson, a peer and the mentor teacher. We call this the Collaborative Approach To Observation (CATO). It was anticipated that having an additional observer in the lesson, in this case a peer, the PST would be provided an alternative view of their lesson. Thus this enables a post-lesson conversation that is shaped by multiple perspectives through a round table discussion.

Research design
This qualitative case study, guided by an interpretivist epistemology (Creswell, 2013), sought to understand the participants’ experience as they engaged in new dialogic practices, during post lesson conversations. Our research uses relational agency (Edwards, 2010) and socio-cultural theories of learning (Hodkinson et al. 2008; Wenger, 1998) as its theoretical framework. The research primarily used data generated from group interviews, online surveys and field-notes. As well it drew on professional practice artifacts such as lesson observation schedules and personal reflections from both mentor and pre-service teachers.
Findings
Our findings indicated that: (1) the use of a descriptive lesson observation tool, used to record evidence-informed observations, fostered a more inquiring stance when reviewing the lesson; (2) that the presence of both the mentor and peer, during the lesson observation, provided multiple perspectives of the lesson, resulting in much richer post-lesson professional dialogue, compared to interactions when only the mentor observed the lesson; (3) this three way dialogue provided opportunities for professional growth for all three participants.
This study contributes to a richer understanding of how we might enhance the professional conversations that occur in post-lesson observation, through the use of multiple perspectives.

How are we planning to make the session interactive?
We will lead a discussion on how other initial teacher education courses conduct teacher PST observations and post-lesson conversations and share some excerpts from the CATO dialogues.

ATEE theme
We suggest that this will be relevant to theme three ‘School-based teacher Education’ and consider that the approach we have developed will provide authentic workplace learning experience for both pre-service and mentor teachers.

References
Learning to teach with a focus on student learning: towards a deliberate practice?

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RDC: Secondary Teacher Education
Subtheme: Innovation

Deliberate practice / learning-focused teaching / practical knowledge

Abstract

Aims
In our previous studies we found that student teachers (STs), who participated in the learning environment (LE) that we designed, developed learning focused conceptions about learning and teaching and showed conclusively learning-focused teaching behaviour. In these studies, STs' focus on their students' learning occurred more and sooner than to be expected on the basis of the general literature about STs' professional development (Lidstone & Ammon, 2002) or about educational interventions (Baeten, Struyven, & Dochy, 2013). The LE that was used can be characterized by the use of authentic contexts, authentic tasks, and reflective dialogues, together with taking student learning as central subject in the programme. As such we intended to facilitate the learning-focused enactment of what STs think and know about teaching and learning (Kennedy, 1999). The combined characteristics of the LE however also aimed to contribute to deliberate teaching of STs with a focus on student learning (cf. Bronkhorst et al., 2011). In line with Bronkhorst et al., who relate enactment to deliberate practice, this process of learning to teach involves 'the ability of the student teacher to put his or her intentions - based on an explicit theory of practice - into action to benefit pupil learning' (p. 1124).

Question
The main research question is: did the STs who showed learning-focused teaching behaviour in our prior study deliberately teach with a focus on student learning? The way STs account for their teacher activities in the lessons they taught may reflect the content and focus of their (practical) knowledge-in-use, including their intentions, in a retrospective way (Meijer, 1999).

Methodology
The context of this study is Dutch Technical Teacher Education, which educates teachers for working in vocational education. The STs (n=12) participated in the LE designed to provoke learning-focused practice. They were interviewed regarding their observed teacher activities to determine how they accounted for their ways of teaching, and if these accounts reflected a deliberate focus on student learning. The main categories of the interview scheme regarded:
Knowledge Construction
Interaction and Guidance
Assignments
Teaching and Learning situation
The data were analysed by a process of data reduction, data display, conclusion drawing and verification.
Results
The accounts of the STs showed a large variety of topics. All topics reflected STs' focus on student learning. STs often explained their teacher activity in terms of the learning processes they intended to provoke in their students. In STs' explanations, stimulating students' use of metacognitive learning strategies, directed at regulating cognitive learning activities, was omnipresent in all main categories. STs also emphasized the importance of stimulating students' use of deep processing strategies. Learning-focused topics recurred in relation to teacher activities at different moments of the lesson, and pertaining to different kinds of main categories. This indicates that their practical knowledge, both in terms of intentions and content, is rather consistent.

Main conclusions
The results show that STs' accounts were explicitly and consistently focused on student learning. STs set their learning goals, applied intentionally their knowledge and skills to realise these, and made their knowledge and skills fit for use in their lesson (Hammerness et al., 2005). The consistency and coherence in their accounts suggest that STs knew well what they intended to realise, and how to realise it, i.e. that they taught intentionally and deliberately.

Implications for practice
The learning environment provides a good practice of teacher education that not only enhances deliberate learning-focused teaching, but may also answer questions about how to bridge the gap between theory and practice in teacher education, and find a model of professional education that is grounded in the practical context of teaching (Grossman & McDonald, 2008).

References
Pedagogical networks: a contribution to curriculum making and learning at the workplace?

Uwe Krause, Hans Palings, Fontys University of Applied Sciences, the Netherlands

Abstract
Influenced by the ideas of a conceptual approach for geography (Taylor 2008), the discussion about powerful knowledge (Young 2011; Roberts 2014) and inspired by a visit at the geography and history department in Cambridge a pedagogical network for geography has been established at Fontys University of Applied Sciences Tilburg in 2012 for Geography. About 25 teachers from secondary schools and 3 teacher trainers are meeting 8 times a school-year to share and discuss ideas and experiences with a focus on a conceptual approach and teaching strategies and tools. The network functions as a change environment (Clarke & Hollingsworth, 2002) to support the professional development of the participants. Moreover these teachers supervise the second year teacher students of Fontys during their traineeship (10 weeks, 2 days a week). In a second part of the network meetings learning activities and the progress of the students are discussed. The aim of this project is twofold: On the one hand to close the gap between theory and practice in the formation of the students. On the other hand to empower students and teachers in their role as curriculum makers. This presentation will focus on the contribution of the network to support the participating teaches in their role as curriculum makers as well as the support of student’s learning at the workplace.

References
How to build sustainable networks for the stakeholders connected to the educational program service and communication, so the students experience more practice-based education?

John Eivind Storvik, Oslo and Akershus University College of Applied Sciences, Norway

RDC: Technical and Vocational Teacher Education (TVTE)
Subtheme: Professional roles of teacher educators

Networks / practice-based education / vocational teachers' education

Abstract
The purpose of this article is to illustrate how vocational teachers within the educational program service and communication can facilitate for more practice based education by activating and facilitate for a stronger cooperation with companies in work life. Research (H. Høst & Reegård, 2015; Håkon Høst, 2015) (R. Høst, Reiling, Skålholt og Tønder 2015) shows that the educational program have a weak grounding in work life and are strongly influenced by extensive use of theory and lack of practice based experiences. Through several public documents and research reports pointed out the need for a stronger cooperation between school and work life (Kultur for læring, 2004; Kunnskapsdepartementet, 2015) and working with the aim of strengthening the quality and relevance of education. The school-based vocational education and training are criticized for not being up to date in relation to the needs of work life and community (Nilsen, 2013). In the development of vocational qualifications, a skilled worker must be able to exercise a profession in accordance with market requirements and the need for skilled employment (Nilsen, 2013). More practice-based training in companies is a relevant and constructive approach, both for students, vocational teachers and businesses. One of the subjects in vocational education allows for collaboration with businesses and it is up to each school to implement the cooperation in practice. This means that there are many different local solutions on how cooperation takes place. The legislators' intention with the subject were also different, depending on what year the learner is. In VG1 (first year) is intended more vocational orientation, which means that students can look at different trades and businesses. In VG2 (second year) is the main intention that students should acquire an apprenticeship (Utdanningsdirektoratet med Samsing, 2010). Examples of forms of cooperation can be that students working in businesses one day per week over a longer period, or two times two weeks in companies. It varies the extent learner can influence the choice of private practice business and training content. The degree of formalization and organization between schools and companies also vary. The article focuses on describing how the establishment of a network for education was implemented, what specific projects that have been implementation and the results projects have given. It also look at what vocational teachers needs to develop network in the community. Research Questions this work is based on: 1. Can students get a more practice-based education if the cooperation between the stakeholders in in the overall educational course will be strengthened? 2. How establishes and maintains the individual teacher teams, networking with participants in the workplace so that students get a more practice close training? 3. Can competence development within the individual teaching team and individual teacher increase understanding of vocational training, networking and career support so strongly that students choose to learn a skill versus supplementary study's curriculum. The goal is that the knowledge of the research questions will be used to strengthen the education of vocational teachers' students.
References
Successful online teaching in vocational teacher training

Pentti Hanhela, Maarit Räisänen, Oulu University of Applied Sciences, Finland

RDC: Technical and Vocational Teacher Education (TVTE)
Subtheme: Professional roles of teacher educators

Cooperative learning / e-learning / participatory teaching

Abstract
Online teaching is often considered only a complementary form of studies. Traditional contact teaching will be replaced by online teaching, if there's a need for reduce in facility, travel or salary expenses. Online teachers often talk more of technical than pedagogical challenges. A traditional teacher may find it difficult to give up the role of controller.

In Oulu Vocational Teacher Education (VTE) online studies of vocational pedagogy have been arranged since 2007. The learning method has been cooperative (CL), inquiry-based learning. In online learning the so called ‘talking head’-method must be discarded. Virtual teaching can offer interactive studies involving students. According to the CL, students work both in expert and home groups. Expert groups search for information and produce material for virtual sessions to take place in home groups which include at least one member from each expert group. The training material is not gone through page by page, since everyone must get familiar with it before the session. In the session the themes will be dealt with, worked on and the core contents discussed, chaired by the expert of each theme. Each group acts as a feedback group in its turn and ensures learning by setting questions. In case of gaps of learning, the session can be renewed. In addition to CL, students reflect on the themes in their personal learning diaries or blogs through their study time. All students avail of open virtual learning environment to support their studies. Responsible working in small groups is an essential way of learning.

The aim of this study is to compare learning outcomes between the students in contact teaching groups and those in online groups, the courses following the similar curricula in VTE. The research questions are:
- How to organize activating online teaching to students?
- How to make students responsible for their learning in online studies?

The material was collected by a survey (http://www.webpropol.com/) sent to 162 student teachers in VTE in 2014 - 2015. Four groups studied in contact classes (90% of studies) and three groups mainly online (80% of studies) through Adobe Connect tool (http://www.adobe.com). Contact classes (87 students) and virtual groups (75 students) were formed into two different research groups. The rating scale was 1-5, 1 expressing 'weak' and 5 'excellent'. The results were dealt with SPSS program. The survey response rate was 73.3 % in the contact teaching group and 62.7 % in the online group.

The students in contact classes thought that their method promoted their learning excellently or well 96.9 %. The online students had 16 virtual learning sessions and four days of contact teaching in university premises in Oulu. They felt that contact teaching promoted their learning splendidly or well 87.3 % and that they learnt contents relevant to the vocational teachers’ work in virtual meetings excellently or well (89.3 %).
Studying in small groups promoted the learning of the *contact* group splendidly or well 90.8 % and of the *online* group splendidly or well 89.4 %. A learning diary or blog was more significant for online students, 91.5 % of them thinking that it promoted their learning excellently or well. In the *contact* group 69.8 % of the students agreed on it. They also estimated equally that they had worked hard to achieve the set targets and been active to meet the challenging requirements of vocational pedagogy.

The outcome of this study shows that according to vocational teacher students’ self-assessments, online teaching is just as valuable as traditional contact teaching in promoting learning. Learning diaries or blogs are important in online learning.
Framework for the development and study of curriculum in practice in vocational education

Birger Brevik, Oslo and Akershus University College of Applied Sciences, Norway

RDC: Technical and Vocational Teacher Education (TVTE)
Subtheme: School-based teacher education

Goodlad / grounded theory / VET

Abstract
This paper sheds light on what the employees of a school have to deal with, whether they are teachers, principals or administrators, namely governance documents set by the authorities, documents often termed curricula. The curriculum therefore has a key role in vocational teachers' professional practice, but it can also be argued that textbooks play an equally large role as curriculum when teaching should be planned and implemented (Justvik, 2014). It would therefore be useful to have an expanded conceptual clarification when reviewing curricula or curriculum as it is used in the American school context. Since the curricula have such a prominent place in the school system, it is therefore natural for schools and education researchers choose to study how the curriculum works in practice. For this developed the American school scientist John I. Goodlad a conceptual framework or model for studying the curriculum in practice (Goodlad, 1979). The issue in this chapter is as follows: How can Goodlad conceptual framework for guidance in studies of curriculum be used for studies and curriculum development in the Norwegian vocational education field?

For this study I have used research methods with qualitative interviews (Kvale & Brinkmann, 2009), and participant observation (Fangen, 2010), to study the practice in schools. What are the teachers say they do (interviews), and what are they actually doing (through observations). Since such qualitative studies often generate large amounts of data, I found it appropriate to have an analysis strategy that relies on the constant comparative method, as described in Grounded Theory (Charmaz, 2014). It consists of an open coding where I analysed the data line by line, then sense of meaning, and categorized them with a label or tag. Then, group I these categories, and found relationships between them through what is described as axial coding. The analytical process was completed through a selective coding process that led to some representative categories. Although this process fine may be a completed manually and sticky note, I found it appropriate to use a computer-assisted tool for this analysis work, which for this study was Atlas.ti (Friese, 2011). With atlas.ti I designed equivalent models Goodlad conceptual framework in response to his question.

A topic discussed within the European vocational training is a horizontal and vertical mismatch between the educational institutions educate and companies needs. This means that it educates students there are no jobs to, while other fields are labor shortages, which can be described as a horizontal mismatch. With vertical mismatch is meant that the trained workers at a level that is not needed. It is now in Europe a great need for skilled workers in many different crafts, while unemployment is high among young people who are rude at a level, both at bachelor and master level. Programs are thus not adapted to the needs of society. By putting this into Goodlad model we can say that transactions and interpretations between ideas curriculum (community) and the design of the formal curriculum is not yet fully in place.
In conclusion I would summarize by saying that the results show that a customized version of Goodlad conceptualization can be used as a framework for understanding both the Norwegian VET and vocational teacher training, as well as framework for understanding the development of new curricula. Such a model can therefore be a useful tool for further development of new curricula, program plans, and curricula in the Norwegian VET and vocational teacher education.

References
Scaffolding primary teachers in designing language-oriented inquiry-based science lessons

Martine Gijssel, Jantien Smit, Saxion University of Applied Sciences, the Netherlands, Anna Hotze, iPabo University of Applied Sciences, the Netherlands, Arthur Bakker, Utrecht University, the Netherlands

RDC: Science and Mathematics Education  
Subtheme: Innovation

Language / professional development / science

Abstract
In this study, 28 in-service primary teachers in two Dutch professional learning communities (PLC's) were professionalized in designing language-oriented science lessons. The research question is: What are the features of a professional development program (PDP) organized as a PLC consisting of researchers, teacher-educators and teachers - for realizing language-oriented science education? We followed the method of design-based implementation research. Data collection consisted of two questionnaires, teachers written logs, scaffolding logs of two researchers, and a mid-term and post-interview of three case-study teachers. During the round table session, we would like to discuss how increased independence of teachers in realizing language-oriented science education was achieved. Secondly, we would like to share ideas about the qualitative analyses. Finally, we would like to discuss a follow-up study, in which teachers are asked to organize a PLC in their own schools so as to realize sustainable innovation.

Background
One way to promote science in primary education is to integrate it with language education (Howes, Campos, & Lim, 2004). However, little research has investigated how teachers' independence in designing language-oriented science lessons can be promoted.

Theoretical framework
The PDP was shaped by the idea of long-term scaffolding (Smit, Van Eerde, & Bakker, 2013) - which entails diagnosis, responsiveness and handover to independence over time - as well as four effective learning activities: reading literature, experimenting in the classroom, interacting with colleagues, and reflecting (cf. Bakkenes, Vermunt, & Wubbels, 2010). Although scaffolding in education typically refers to help provided by a teacher to promote children's independence, we extended the concept's use to include teacher professionalization.

Outline
The research question is: What are the characteristics of an effective professional development program (PDP) - organized as a professional learning community - for learning language-oriented inquiry-based science education? The PDP consisted of six sessions of three hours each. Data collection consisted of two questionnaires -'Dimensions of Attitude Towards Science' (DAS; Van Aalderen-Smeets, & Walma van der Molen, 2013) and a questionnaire concerning teachers' science education) - and written logs of teachers concerning their learning activities. In addition, three case-study teachers were interviewed during and after the PDP (transcribed verbatim). Researchers filled in scaffolding logs in between sessions, containing diagnoses, as well as intentions as to how to be responsive to these diagnoses. All sessions were videotaped so as to analyze teachers' increasing
independence. To investigate teachers learning, we will analyze teachers' self-reported learning outcomes, as expressed during the interviews. To this end, we employ four categories (Bakkenes, Vermunt, & Wubbels, 2010): (1) changes in knowledge and beliefs, (2) intentions for practice, (3) changes in practice, and (4) change in emotions. In addition, all teachers' written logs will be analyzed by means of this framework. To investigate the characteristics of the PDP, we will analyze the researchers' scaffolding logs.

Discussion
How can increased independence of teachers in developing language-oriented science lessons be achieved?
What are your thoughts on the methodology of analyzing our results?
How could long-term implementation of PLC's be realized in order to get sustainable innovation in science education?

Relevance ATEE
This study is closely related to the theme of ‘Innovation'; it focusses on the process of teachers in innovating their science education. What is needed for teachers to ultimately design independently these lessons and even become an ambassador in the school? Concerning the RDC's, our study is connected to the first three themes of the RDC Science and mathematics. In our study, we look for characteristics of a learning program for teachers in teaching language-oriented science lessons. This will provide valuable insight in the use of scaffolding in preparing teachers to become independent in designing science lessons.

References
A Framework for Natural Science Education

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RDC: Science and Mathematics Education
Subtheme: Innovation

Cross-cutting concepts / misconceptions / scientific literacy

Abstract
Since 2010 pupils in Flanders no longer follow physics and biology as separate subjects during the first two years of their secondary education. Instead, both subjects are combined into one subject called natural sciences. The idea behind this reform was that more coherence between the different subjects would lead to a higher level of scientific literacy. In practice, however, natural science lessons show little evidence of making explicit connections between physical and biological concepts. This is hardly surprising because most teachers are trained in either physics or biology and little help is found in the currently available instructional materials.

To remedy this problem we have developed a theoretical framework, largely based on the ideas behind the Next Generation Science Standards in the U.S. It was conceived to support teachers to go beyond their area of expertise and help them recognize that the natural sciences can be taught as one unified whole. It is based on four pillars:

- Preconceptions of pupils are explicitly addressed during instruction.
- Depth versus breadth of knowledge: eight core ideas are used to select and organize content.
- Higher-order cognitive skills and basic laboratory skills are developed simultaneously.
- Pupils are trained in using cross-cutting concepts to identify unified ideas across subject boundaries.

Preliminary results indicate that teachers recognize the advantages of the framework, but the lack of readily available instructional materials is seen as an impediment for its implementation. We therefore want to go a step further and develop instructional materials based upon the framework, followed by field tests to determine its effectiveness. The following questions will be investigated:

What is the effect of the new methodology on the content knowledge of the pupils?
Does the new methodology lead to more coherent and better organized knowledge structures?
Does the new methodology discourage the formation of commonly held misconceptions about natural science?

What is the effect of the new methodology on the scientific literacy of the pupils?
Does the new methodology lead to a better understanding of the nature of science?
Does the new methodology contribute to the development of functional scientific literacy?

The project will take place over a period of three years and we will adopt a design-based research approach. For each research question a suitable test will be developed and administered pre- and post-instruction. It is our intention to use the results to support an ongoing reform of the teacher educator program at our institution.

We would like to present the following questions for a round table discussion:

How do you prepare science teachers-in-training to teach such a broad subject?
How do we empower them to make sufficient connections between the different domains of biology, chemistry and physics?

References
Cosmochemistry as a Part of Chemistry Teaching in Primary Education

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RDC: Science and Mathematics Education
Subtheme: Innovation

Chemistry teaching programs / cosmochemistry / chemistry teaching

Abstract
Cosmochemistry as a separate scientific discipline within chemistry was founded in the mid-19th century in Serbia. This discipline developed independently, and before other disciplines of natural science in Serbia. Its development was closely linked to the development of astronomy in the early 19th century, and above all represented the merit of the first South-Slavic scientists, and their pioneering scientific research. In the mid-70s of the 19th century, the first chemical analysis of meteorites was conducted: Jelica and Sokobanja, which was found in the territory of Serbia. Teaching topics from cosmochemistry were studied within the school subject Chemistry with mineralogy in high schools until the Second World War in the Kingdom of Yugoslavia. From 1945, these teaching topics were studied in astronomy in the reformed Yugoslavian high and secondary schools. Today's chemistry teaching programs and text books for primary and secondary schools almost do not contain, and do not deal with teaching contents from cosmochemistry.

This paper, will discuss possibilities of use of new scientific discoveries from cosmochemistry in the teaching of chemistry, primarily arising from NASA space research programs: New Horizon, Cassini-Huygens, Mars (Exploration Rovers, Pathfinder, Polar Lander), Deep Impact etc. In addition, it will be presented the teaching topics from cosmochemistry, which could be implemented and processed within the chemistry teaching programs for the 7th and the 8th gr. of primary schools in Serbia. In the central part of the presentation, it will be discussed and considered the implementation of teaching contents from cosmochemistry, its processing, and correlation with chemistry teaching topics, goals and tasks of chemistry teaching, as well as preparing and developing of teaching materials.

The main goal of this paper is to present an alternative form of learning chemistry, with the help of contents from cosmochemistry. In addition, it could contribute to the increase of students' interest in learning of natural science, especially the disciplines astronautics, astrophysics, astrobiology, cosmology etc.

The application of contents from cosmochemistry does not only aim at popularization of natural science - chemistry, i.e. their teaching, but it also has significant educational character in general. It is reflected in civilizational, technological, economic and social importance of the current international cosmic research. Terraforming, colonization of other planets, finding new raw materials, planets with conditions for life similar to Earth or new life forms are only a part of the future tasks of the new generation of young researchers.

Teaching of natural sciences-chemistry open the endless possibilities of processing and implementation of integrative teaching contents, the need for constant innovation, as well as the further vocational and professional education of teachers based on the school practice.
Parallel sessions 4
89 – Professional development of teacher educators - lessons learned in international co-operation

Jurriën Dengerink, VU University Amsterdam, the Netherlands, Michal Golan, MOFET Institute, Israel, Mieke Lunenberg, VU University Amsterdam, the Netherlands

RDC: Professional Development of Teacher Educators
Subtheme: Professional roles of teacher educators

Learning needs / professional development / teacher educator

Abstract

The Aims of this symposium are to get more insights in the following areas:

1. The ways experienced teacher educators learn across boundaries by exchanging knowledge and experiences, and relate their own learning to the professional development of teacher educators;
2. The learning needs of teacher educators across Europe and Israel.

The presentations in this symposium are based on the work of the International Forum of Teacher Educator Development (InFo-TED) (Vanassche et al., 2015). The focus is 1) on the collaborative learning of members of the Forum, and 2) on an international comparative survey (n= 1158), conducted by the Forum. Central is this second study are the research dispositions and professional learning needs of university- and college-based teacher educators across Europe and Israel. These presentations enfold important contributions to the discourse on teacher educators' professional learning, due to the richness of the local as well as the international data. They are closely related to the conference theme of Professional roles of teacher educators and the work of the ATEE-RDC Professional Development of Teacher Educators.

The study of the collaborative learning of InFo-TED members is grounded in self-study-research (Laboskey, 2004) and closely related to studies about professional learning communities of experienced professionals (Wenger, 1998; Stoll et al., 2006). The questions of the survey-study are theoretically grounded in earlier national studies on the researcherly dispositions of teacher educators (Tack & VanderLinde, 2016) and on the professional learning needs of teacher educators (Dengerink, Kools & Lunenberg, 2015; Smith 2011).

The main questions to be discussed in this symposium are the following:

1. What kind of professional learning activities are most supportive to teacher educator’s professional learning?
2. In which respect are specific roles, (national) contexts, and experience relevant for the choice of their learning activities?
3. How do these results contribute to the improvement of teacher education?

References


**Presentation 1: Professional development of experienced teacher educators: Learning across boundaries**  
*Mieke Lunenberg, VU University Amsterdam, the Netherlands, Jean Murray, University of East London, United Kingdom, Kari Smith, Norwegian University of Technology and Science, Norway, Ruben Vanderlinde, University of Ghent, Belgium*

**Aim**

Although the number of studies on teacher educators has been increased in last decade (Lunenberg, Dengerink, Korthagen, 2014), there are few studies on professional learning across boundaries. In this paper, we – experienced teacher educators - focus on our learning through our involvement in the International Forum for Teacher Educator Development. InFo-TED was established in 2013 with a mission to bring together, exchange and promote research, policy and practice related to teacher educators’ professional development. Since its establishment members of the forum have been engaged in a series of activities (Vanassche et al, 2015), here seen as learning opportunities. In Belgium (Flanders), England, the Netherlands and Norway we have supported the professional development of colleagues nationally, studied these processes, and tried to influence policy makers. We are convinced that professional development needs more attention, but we also know that what is already done and what is still needed differs for our countries. That raises the question what it means to be and learn as European teacher educators.

**Research Question**

What is the interplay between our own learning and the ways in which we can support colleagues, taking into account the reciprocal effect of working in national as well as in international contexts?

**Methods**

Data collection included 1) personal narratives about our learning 2) documents of the group’s activities. Following a collaborative self-study approach to analyse these texts, we utilised an interactive exploration of the narratives and the other documentation, using a grounded theory approach. The findings were shared in a roundtable discussion at the European Educational Research Association conference (Porto, 2014). Here critical feedback from the public was requested. This discussion helped us to ‘see a situation through others’ eyes’ (LaBoskey, 2004, p. 847) and also aimed to add to the rigour and trustworthiness of the analysis.
Findings
Our involvement in InFo-TED has provided us powerful learning experiences. How then can these create models for our colleagues’ learning?
We have identified the following supportive aspects:
1. a positive learning environment which allows for collegial but critical discussion and the generation of learning activities which enable deep debates on the underpinning of teacher educators’ work,
2. a deep, personal involvement in wanting to strengthen the professionalism of teacher educators,
3. being in positions to contribute to the knowledge about the learning of teacher educators,
4. awareness of the practices in the policy and institutional contexts for teacher education, nationally as well as internationally.

Conclusion and reflection
The most important theme emerging from this study is that it is possible to make productive use of different national voices and develop common understanding and goals for being and learning as European teacher educators. We hope that our work in InFo-TED will enable European teacher educators to develop the feeling of belonging as a teacher educator. Only then can working together, to
‘help us to develop our understanding of professional learning in complex and changing times when global imperatives have an increasing influence on the policies and practices that shape professional learning at the local level’ (Stevenson, 2015, 758).

References

Presentation 2: The professional development needs of teacher educators – lessons from InFoTED’s international study and the Israeli perspective
Michal Golan, Ainat Guberman, MOFET Institute, Israel

As a key to education quality, improving teacher education is a widely accepted goal (European Commission, 2015). Teacher educators’ work (Ben-Peretz, Kleeman, Reichenberg & Shimoni 2010; Lunenberg, Dengerink and Korthagen 2014; Swennen, Jones and Volman, 2010) consists of a variety of roles, each of which may require professional development: teaching, coaching, facilitation of collaboration between diverse organizations and stakeholders, assessment, ‘gatekeeping’, curriculum development, research and critical inquiry. Driven by the relatively little attention the professional development needs of teacher educators have received, this study aimed to discover what
professional development activities do higher education-based teacher educators value, and how best can these activities be realized?

Methods
The participants were 1,158 teacher educators working in higher education institutions, from six countries participating in the International Forum for Teacher Educator Development (InFo-TED): Belgium, Ireland, Israel, the Netherlands, Norway and the UK. They were recruited through the institutes in which they work, professional associations and meetings (e.g., study days, local conferences and college staff meetings). In order to assess their professional development needs and preferences a questionnaire was constructed, partially based upon earlier questionnaires (Sagee, 2014; Tack & Vanderlinde, 2016). It was pre-tested and then distributed in English in all participating countries except the Netherlands and Belgium, where it was translated and distributed in Dutch. Statistical analysis involved frequency distributions, univariate comparisons and factor analysis.

Findings
Teacher educators are only moderately satisfied with their experiences of professional development to date, yet they have a strong desire for further professional learning. They form a heterogeneous group. One of the most conspicuous divisions is between those whose main interest involves the development of their educational capacities and those who prefer to enhance their academic career. The former prefer updating on curriculum developments in teacher education, enhancing their subject knowledge, assessment procedures, and mentoring/coaching student teachers, whereas the latter are more interested in promoting their research and writing skills and presenting at conferences. This division reflects teacher educators' recruiting methods (Griffiths, Thompson and Hryniewicz 2014; Smith, 2011) and is apparently maintained throughout their career. Teacher educators wish to be part of a community of learners, however time constraints were perceived as a major obstacle to engagement in professional learning.

Israel's colleges of education educate teachers for pre-school through lower secondary school. Traditionally, teacher educators were recruited from schools, whereas nowadays, they are mainly recruited from universities and must have Ph.D. Teaching experience, though desirable, is not required. The MOFET Institute provides professional development opportunities to college based teacher educators. These include teacher educators' learning communities, research support, publishing house, and studies in diverse aspects of teaching and mentoring (Reichenberg, Kleeman & Sagee, 2013).

The highest ranking options for professional development among Israeli respondents were personal reading, academic writing, informal conversations with peers and international exchanges. They were slightly more interested in academic than in educational subjects and activities. Relative to other countries, Israelis were more interested in specialization in academic administration.

Conclusions
Findings suggest that respondents' background as well as current working conditions play a role in shaping their professional development preferences. Allocating designated time for professional learning may enable teacher educators to acquire and develop a more diversified and balanced ‘toolkit’. Furthermore, working together may help teacher educators create distinct and coherent professional identity and further develop their profession.
References

Presentation 3: Professional development needs of teacher educators – lessons from InFo-TED’s international study and the Dutch perspective
Jurriën Dengerink, Mieke Lunenberg, VU University Amsterdam, the Netherlands

The work of teacher educators is multi-faceted (Davey, 2013; Lunenberg, Dengerink, & Korthagen, 2013). This study, which is part of an international study on the researcherly dispositions and the professional development needs of teacher educators, conducted by the International Forum for Teacher Educator Development (InFo-TED) (Vanassche et al, 2015), focuses on the multifaceted character of the work of teacher educators and their differentiated professional development needs in the Netherlands. Specific research questions were:
- what are the main elements or the work of beginning and more experienced teacher educators in Dutch universities (research universities and universities of applied sciences)
- what are the levels of interest for specific areas and activities for their professional learning and
- in which respect play experience and work context of teacher educators a role in their preferences for professional development goals and activities?

Methods
The questions of International InFo-TED survey on researcherly dispositions and the professional learning needs of teacher educators were leading for the Dutch survey. The Dutch translation was validated in a pilot with 40 teacher educators. Participants in the survey were 355 teacher educators, of which 124 were working in a research based university and 239 in a university of applied science. Teacher educators of universities of applied sciences were recruited from the member list of the
Dutch association of teacher educators VELON, teacher educators of research universities were recruited from the staff-lists of these universities. Results were processed in SPSS and analysed by descriptive analysis.

**Findings**

The work of Dutch teacher educators is, as in other countries, characterised by a large variety of work, though they are relatively less than their colleagues in other countries (but still more than 60%) involved in the continuing professional development of teachers and also relatively less engaged in research, which may be related to the low percentage of teacher educators with a PhD in the Netherlands (20%). Especially teacher educators in Dutch research universities have relatively small part-time positions. The Dutch teacher educators, especially the more experienced ones, are, compared with their colleagues in other countries, most satisfied with their professional opportunities. Reading, informal conversations and observation of colleagues are most valued as professional learning activities among Dutch teacher educators. Themes directly related to the pedagogy of teacher education and coaching of students are prominent in their learning needs, but there is also a substantial interest in the more meso- and macro-aspects of teacher education. The interest in academic themes like improving research skills, scholarly writing, presenting at conferences and reviewing papers is compared to other countries (except Belgium) rather low. Preliminary findings show that years of experience, work-context and position are important factors for differences in satisfaction about professional learning opportunities, and that position and level of prior education are important factors for the degree Dutch teacher educators are interested in the more academic aspects of professional development.

**Conclusion and Discussion**

Learning preferences of teacher educators in the Netherlands are closely related with their day to day practice of teaching students. Dutch teacher educators value informal learning relatively high. Findings align to a high degree with an earlier survey, conducted among Dutch teacher educators (Dengerink, Kools & Lunenberg, 2015). But compared to that survey, interest in academic and scholarly activities is increasing. The relatively high interest for observation by and of colleagues may be due to the success of several lesson-study-projects in the Netherlands.

**References**


175 – Teacher Professional Development in Education for Diversity

*Patricia Eaton, Lisa McKenzi, Stranmillis University College, United Kingdom*

RDC: Education for Social Justice, Equity and Diversity
Subtheme: Innovation

Diversity education

**Abstract**
This paper reports on the experiences of teachers who participated in the *Classrooms Re-imagined: Education in Diversity and Inclusion for Teachers* (CREDIT) programme. The core aim of the CREDIT project was to provide substantive in-service professional development courses for existing teachers across Northern Ireland in nursery, primary and post-primary schools to assist them in developing awareness and practical skills in dealing with division, diversity, inclusion and community relations/reconciliation in the classroom and on a whole-school basis. The programme was organised as a number of days development interspersed with periods back in school with a virtual learning environment (VLE) used to encourage continuing dialogue and reflection during the periods between formal input, when teachers had returned to their own schools. A questionnaire was distributed to teachers during and after each course and at six months after their engagement with the course. This paper reports on the findings of these surveys with the different cohorts of teachers. Results of the paper-based questionnaires were analysed and common emergent themes identified. A follow up focus group was held with a number of participant teachers to explore these emergent themes further and to discuss reflections after the course had finished. This paper commences with a review of current literature on continuing professional development in this area of diversity and inclusion and this particular study is then situated in this wider context. The findings are then presented and the paper concludes with recommendations. Although the work is situated in the context of historical divisions in Northern Ireland it also addresses broader issues of diversity, such as race and sexual orientation and as such, can be applied widely in education systems around the world.
Power relations and educational research. Ontology, epistemology and methodology

György Mészáros, Eötvös Loránd University, Hungary

RDC: Education for Social Justice, Equity and Diversity
Subtheme: Innovation

Power

Abstract
In accordance with the special focus of the RDC, this paper will examine the theoretical backgrounds of different research traditions in education and especially in teacher education in connection to the question of power. This theoretical reflection is necessary to connect practice (praxis) and theory in order to promote innovative teaching and research.

Philosophical background
Power is interpreted in various ways in different philosophical approaches. For example: systemic power: Marx and Bourdieu, discursive power: Foucault, performative power: Butler. Power may be considered as positive, emancipatory or oppressive force. Different authors pay attention to different forms and representations of power and oppression such as hegemony (Gramsci), gender based power (Connell, Butler), sexism, heterosexism, adultism, etc.

Ontology and power
Different research ontologies imply different interpretations of power issues. Postmodern and realist approaches will be examined with particular focus of critical realism's ontological perspective (Bhaskar, Banfield). The ontology of human beings, teacher and children may determine the power relations in research between the different participants. New materialist research, teacher professionalization discourse and adultism in research will be presented as examples in this regard.

Epistemology and power
Postpositivist, postmodern and critical epistemologies draw on different concepts of power. Postpositivist research is often criticized because of its not sufficient reflexivity on interpretation and power issues. Critical epistemologies interpret power in structural, systemic terms with particular attention to oppression. Postmodern approaches generally follow a more discursive or textual concept of power and they provide the most reflexive approaches in research.

Methodology and power
Several methods can enhance a deeper reflection about power relations and a more equal participation of everyone in the research process. However there is a discussion about the empowering or participatory research methods whether they are really 'less oppressive' than other methods or they offer only an illusion of a more equal research process. Some research methods used in teacher education directly consider power relations: particularly practitioner research, self-study, autoethnography. They also serve as empowering tools for teachers. However, their use raises questions about the individual and communitarian aspects of power.
Can International Practicum develop Intercultural Competence among Teacher Students?

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RDC: Education for Social Justice, Equity and Diversity
Subtheme: School-based teacher education

Global awareness / intercultural competence / international practicum

Abstract
European classrooms have become more diverse due to immigration. This implies new challenges for teachers and teacher education. However, a majority of teachers and teacher students are majority culture Norwegians with little experience or knowledge of other cultures. An international practicum is potentially effective in transforming learners’ perspectives and prepare teacher students for work in a diverse classroom. This study draws on discourses within transformative learning theory, intercultural sensitivity and diversity in an attempt to understand the teacher students experience during an international practicum (Mezirow 1981, 1989; Taylor 1994; Bennett 2004). Experience of otherness is central in Mezirow’s theory of perspective transformation. They will teach in an unknown setting and experience the differences in teaching in another context. The cultural shock that many will experience may be a catalyst that might lead to a change in frames of reference that might lead to increased cultural sensitivity. To learn to be mindful of other people and open to diversity implies recognition and experience of otherness. However, this will depend on the ability of the student to reflect and elaborate on an existing point of view and habit of mind, and transform it into a new frame of reference. Thus, international experience alone does not necessarily make the students interculturally competent.

With Mezirow’s theory in mind, a central question emerges; how can we design a programme that will foster transformative learning? At our university, the international practicum programme consists of three phases; pre-departure, in country and re-entry. The programme is designed to help students enhance their learning outcome by providing relevant knowledge as well as to stimulate their reflection on their experiences. The traditional non-interventionist programmes are waning and most new programmes are based on ‘a new paradigm, based in the understanding that students learn more effectively abroad when we intervene in their learning’ (Van de Berg and Paige 2009, 433).

The objectives are:
- How are Norwegian teacher students’ global perspectives and intercultural competence changed during an international practicum in Namibia?
- How can the institutions design an international practicum to enhance the learning outcome?

The study employs a qualitative design and involve semi-structured and structured interviews of participants in international practicum and teachers that have taken part in international practicum previously. They are invited to reflect upon their experiences during the practicum period. Text analysis is used to analyse and systematize the data.
The international practicum seems to have helped many of the teacher students to feel more at ease living and working in a multi-ethnic and multicultural society. Many of the students became more open and tolerant and developed their communication skills with people from different cultural backgrounds. They learned to appreciate, tolerate and become more open to cultural differences. For some students, however, the difference in culture gave them a negative impression of the Namibian society and culture. For these students their stay might have reinforced negative stereotypes.

We will discuss how to improve the quality of international practicum programmes in order to reach the aims of the programmes. This implies motivation and selection of students, preparation before practicum, guidance, debriefing, reflection and post-assignment support. We think this presentation is highly relevant for European teacher education institutions as most are have the same challenge; how to prepare initial teachers for their future work in diverse classrooms.
What is the common root for school marketing and horizontal learning that fosters school innovation? A case study of a vocational secondary school in Hungary

Helga Misley, László Horváth, Ágnes Vámos, Eötvös Loránd University, Hungary

Abstract
The aim of our research is to make connection between marketing and horizontal learning (HL) of teachers. Since this is a novel approach, we will discuss our findings around a specific case study. Our research questions are the following:

What are the aspects of a professional learning community (PLC) (DuFour, Eaker & Many, 2010) which supports school marketing (Kotler and Fox, 1995; Oplatka, 2002) activity? How can strategic thinking be a link between school marketing activity and HL of teachers (Nilsen, 2010; Peng-Fei, 2014)? Can a marketing-active school be considered as an innovative learning environment (OECD, 2013)? In our research we are searching for the synergic connection of PLCs (regarding teachers HL) and school marketing activity. The PLC is a process of teachers constantly collaborating, sharing their knowledge and develop themselves in order to serve the interests of the children better - an ongoing process for changing school culture. Strategical marketing thinking and using marketing tools is not a common practice of Hungarian public schools. Educational marketing is an indispensable managerial function without which the school could not survive in its current competitive environment; marketing is considered to be a holistic management process (Foskett, 2002).

We employ a mixed methodology approach by assessing the elements of PLC oriented school culture (human, interpersonal, organisational and network capacity) with an expert-led diagnostic assessment tool developed under the Hungarian Institute of Educational Research and Development (Horváth, Simon & Kovács, 2015). We combine the results of the survey with a case study (semi-structured interviews, document-analysis; web-analysis and social media analysis) of a Hungarian vocational secondary school.

We analyse the intersection of the significant aspects of PLCs (vision, self-directed learning and networking) and the main activities of marketing (profile, image; concurrency testing; marketing knowledge).

In our previous research we found out that traces of marketing thinking are present in PLCs. In the case study we found that the school’s vision is comparatively low, which could be analysed from the side of strategic marketing thinking: while the school emphasizes student recruitment, this approach does not permeate the whole organization as it lacks a coherent strategic thinking. On the other side the analysed school has a broad educational portfolio and actively cooperates in partnerships and that is supported by the PLC diagnosis. The school has its own marketing team which actively communicates and promotes its purpose, values and products to the pupils, parents, staff and also the wider community which shows us the importance of self-directed learning.

In conclusion we found concrete evidence that the PLC diagnostic tool can be used in conjunction with the analysis of marketing activity of a school, which validated both tools in a case study. Regarding teacher education we can emphasize the importance of conscious marketing thinking in the development of a PLC which has been linked to student performance (Hord & Sommers, 2008). Our research also has implications for educational leadership which emphasize the strategic
positioning of marketing in a school organization and the strategic thinking capabilities of the principal. Regarding the Hungarian context the marketing activities of a school is mainly an innovative field rather an established approach, therefore our research contributes to the better understanding of school marketing as an independent field.

In the interactive session we would like to discover the participant’s thoughts on schools as PLCs in their countries and the marketing activities of their schools as well. Then we would proceed to explore the common points of the explored fields. If an active collaboration ensues we could use the session for establishing a new research plan for analysing the problem on a wider scale.

References
54 – Perceptions and Strategies of School Leaders in Challenging Times: Findings from Research carried out in Portugal

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RDC: Educational Leadership and Management
Subtheme: Innovation

Resilience / school leadership / strategies

Abstract
The context of economic crisis in Portugal has led to policy initiatives that have impacted on schools and teachers' work. This situation creates a complex context for principals to work. The paper presents data drawing from a broader 3-year research project funded by Fundação para a Ciência e a Tecnologia (National Foundation for Science and Technology) (PTDC/CPE-CED/112164/2009) aimed at examining conditions for teacher leadership in challenging circumstances. A mixed-method research design was devised, including a national survey, interviews, focus group, and the development and evaluation of strategies to involve teachers exercising leadership in their schools. In this paper, findings from the second phase of data collection are presented. In total 11 principals were interviewed from 11 schools. Findings suggest that principals have to deal with heavy bureaucracy, teachers' lack of motivation and external pressures to meet student achievement alongside deprivation of students' families. Issues such as intrinsic motivation with a high sense of resilience will be discussed. These and other issues will be discussed further in the paper.
Individual innovativeness of preservice teachers

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RDC: Educational Leadership and Management
Subtheme: Innovation

Individual innovativeness / preservice teachers

Abstract
Innovativeness could be defined as a concept that new ideas are put into practice (Nail, 1994). According to Rogers (1995); 'innovativeness is the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than other members of a social system'. Innovativeness can be regarded as an umbrella term over the concepts like; creativity, leading new opinions and risk-taking. Individuals in the society show different characteristics in terms of innovative attitudes. While some individuals may internalize innovations earlier, show willingness for changes, some of them are reluctant for changes and may internalize innovations later. Individuals can be classified in five different categories. These categories can be entitled as: Innovators, Early Adopters, Early Majority, Late Majority and Laggards (Rogers, 1995).

Innovators are willing to take risks and implement new ideas. They are visionary individuals.
Early Adopters are technology oriented individuals who lead the others about innovations.
Early Majorities are individuals who are wary about innovations and reluctant on risk-taking.
Late Majorities are sceptic about innovations. They abstain to implement new ideas.
Laggards have bias about changes. They have tendencies to repudiate innovations.

Sustainable innovation is required to keep up with the requirements of Global competition. Therefore, individuals who have tendencies on implementing new ideas, solving problems, practicing and leading innovations are needed for development of societies.

As widely accepted throughout the literature characterization of teaching profession starts during the period of preservice teacher training. So, questioning innovativeness of preservice teachers is really important to train them according to needs of future. Therefore in this study it was aimed to determine the level of teachers' individual innovativeness in terms of some variables. Within the scope of this aim, the answers for these research questions were sought:

- What is the level of individual innovativeness of preservice teachers?
- What is the level of individual innovativeness of preservice teachers in terms of sub-dimensions of innovativeness?
- Does the level of individual innovativeness of preservice teachers differ in terms of some variables? (such as; gender, age, class, educational program and income)

The study was designed as a quantitative survey method. Random sampling method was used in the study. The population of the study consisted of 3000 preservice teachers who were trained in 2015-2016 academic year at Anadolu University Faculty of Education. The sample consisted of 500 preservice teachers who responded to the survey voluntarily. Because of incompletely-filled questionnaires, only 456 of them were taken into consideration during data analysis. The data were gathered via "Individual Innovativeness Scale" developed by Hurt, Joseph and Cook (1977) and adapted to Turkish by Kılıçer and Odabasi (2010). When it was adopted to Turkish, it was found that the scale had four factors 'Resistance to change', 'Opinion-leading', 'Risk-taking' and 'Openness to experience'. The internal reliability coefficient of the Turkish-version of whole scale was calculated as a=0.82. Besides, the internal reliability of four factors were calculated, respectively, as a=0.81, a=0.73,
a=0.77 and a=0.62. SPSS was used to analyze the data. Standard deviation, arithmetic mean, percentage, frequency one-way between-groups analysis of variance (ANOVA) and independent samples t-test were used to analyze the data. Tukey test was used to examine the sources of differences among the groups after significant ANOVA results. The preliminary findings of the study revealed that individual innovativeness level of preservice teachers was at the level of 'quite a bit', but it was not at the level of a 'great deal'. There were significant differences in the sub-dimensions of individual innovativeness.

References
116 – Establishing an inquiry-based learning community in mentoring sessions during Initial Teacher Education

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RDC: In-Service learning and the Development of Practice
Subtheme: Innovation

Initial teacher education / inquiry-based / lesson study

Abstract

Topic and research questions

This paper reports on a study on mentoring sessions in two different conditions, a Business-As-Usual condition and a Lesson Study intervention. We will address two questions in particular:
- What changes in participation patterns can be observed from the business as usual condition to the Lesson study intervention?
- What seem to be critical factors in establishing an inquiry-based learning community?

Research on mentoring during field practice continues to find that there is little collaboration that takes place (Helgevold, Næsheim-Bjørkvik & Østrem, 2014; Ohnstad & Munthe, 2010; Patrick 2013; Sundli, 2007). The aim of the Lesson Study intervention in field practice in an ITE program is to strengthen collaborative inquiry through developing inquiry-based learning communities.

Methodology

Data collection was carried out during field-service in the student teachers’ fourth semester. A total of 54 mentoring sessions were recorded, 30 in BAU and 24 in INT. Participants volunteered to take part in both the Business-as-usual study (BAU - spring 2013) and the Intervention study (INT - spring 2014). The students and mentor teachers represented four subjects; mathematics, science, English and physical education In BAU, university teachers, mentor teachers and pre-service teachers met once on campus, before the field practice. In INT, three additional meetings were arranged to learn about lesson study and to plan and design the intervention in collaboration. Through these meetings ‘A Hand-book in Lesson Study’ was developed to support the intervention for all involved. This handbook included guidelines for how to plan and carry out a lesson study cycle during internship, including how to gather, interpret and use data about pupils’ learning. The handbook also suggested relevant questions to be asked and discussed in mentoring conversations as a support for mentor teachers. Prior to their field practice, the students in INT learned about Lesson Study from their university teachers. An observation protocol inspired by Rivera & Tharp (2004) was developed through an inductive approach where categories emerged through observations of video recorded mentoring sessions. This observation protocol was used when coding all 54 mentoring sessions in both conditions.

Findings

Findings show changes in participation patterns from BAU to INT. Commenting and asking questions dominate both in BAU and INT, but both are more prevalent in INT. Mentoring sessions in INT last longer than in BAU and this might be some of the explanation. This increase points to a change in participation patterns between the two conditions. Pre-service teachers have far more comments than mentor teachers' in INT, indicating that pre-service teachers are given - or take - more 'time and space' here than in BAU. In the category 'asking questions' registrations show that only mentor teachers are responsible for this increase. Suggestions in the hand-book for questions to be asked
and discussed in mentoring conversations might explain this. In BAU the mentor teacher and the student teacher responsible for teaching the lesson are active participants, while the other students were on-lookers. In INT registrations point to a more evenly distributed pattern among all participants. The analyses point to differences between the groups. The groups who were able to make predictions on students thinking and behavior and develop relevant research questions were able to do detailed observations of students' learning. These seemed to be critical factors in establishing a learning community. Mentors asking questions directed towards pupils' learning during this process also initiated a more inquiry based- approach to learning teaching. The intervention resulted in more time being spent on the mentoring sessions, allowing for time to investigate, to predict and to analyze observations made.

References
OECD (2011). Building a High-Quality Teaching Profession, Lessons from around the world
Observed Learning Strategies of Conservatory Music Students

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RDC: In-Service learning and the Development of Practice
Subtheme: Innovation

Cognitive strategy / learner autonomy / metacognitive

Abstract
One of the spearhead projects in the Finnish education today is learning to learn, i.e. learning strategies. Conative learning strategies are connected to a student’s effort regulation and to motivational strategies referring to a student’s general self-management. To differentiate between cognitive, affective and conative strategies, cognition refers to processes of recognizing and acquiring information. Affect means feeling or even the energy resulting from an emotional or general reaction. Conation refers to the mental processes of development including motivation and volition. Motivational aspects consist of goal-orientations, fear of failure, need for achievement, self-esteem, belief in one’s own abilities and possibilities. Volitional structures refer to persistence, will to learn, effort, mindfulness in learning, intrinsic regulation, evaluation processes and control strategies as well as information processing. Learning is situated in domains of expertise and social interactions. Learners’ conceptions of learning can be treated as metacognitive knowledge that influences task engagement. If they have a conception of the necessity of fast progress, they are likely to adopt superficial learning strategies. If the tasks are regarded as challenges, it refers to good effort and performance and deep learning strategies. Perceived self-efficacy is defined as people’s beliefs about their capabilities to produce designated levels of performance. Metacognition refers to higher order thinking skills which involve active control over the cognitive processes engaged in learning. Planning how to approach a learning task, monitoring comprehension and evaluating progress are metacognitive in nature. Cognitive strategies are used to help an individual achieve a particular goal, while metacognitive strategies are used to ensure that the goal has been reached. Cognitive and metacognitive strategies are closely intertwined and dependent upon each other. They are connected to social and affective strategies.

The research material was collected from music students in the Conservatory of Oulu in 2003-2011. Several groups of students participated in music workshops aiming at concert performances. They were supervised by their own music teachers and professional musicians. They answered set question before and after the workshops. These texts form the main material of this study.

The research questions are:
- What are the music students’ conceptions of their ways and aims of learning?
- What kind of strategies do they seem to use according to their texts?

The research method was a qualitative case study. The texts were examined by two researchers. Concerning some expressions a third researcher was used to make a triangulation. Qualitative outcomes are not generalizable, but describe the chosen groups. This study concentrates on observing superficial and deep learning as well as cognitive, metacognitive, affective and social strategies.
The outcomes show that the primary goal was deep learning for which different strategies were used. The students stressed the ways how music is learnt, how much autonomous and team work learning requires and what meanings intensive, concentrated work and reflected analysis of personal performance have in learning. Besides aiming at deep learning the texts tell about cognitive and metacognitive strategies. Reflection made them conscious to give meanings to their experiences, which increased motivation and self-efficacy beliefs.

Social strategies were important in team work, in identifying with professionals who were also role models. Affective strategies supported the promotion of skills: playing in ensembles was rewarding. To sum up: before the workshops the students planned their learning and prepared material as well as decided what and how to practice. Cognitive strategies seemed to include cognized goals, causal attributions and outcome expectancies. The action showed metacognitive strategies in control over cognitive processes, in metacognitive knowledge (knowledge of themselves, tasks and strategies) and in metacognitive skills (awareness of one’s abilities). Social and affective strategies spurred the students in learning.
Parallel sessions 4

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37 – Formal and informal workplace learning of teachers in schools operating as learning organizations

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RDC: In-Service learning and the Development of Practice
Subtheme: School-based teacher education

Learning organization / teacher learning / workplace learning

Abstract

The aim of this paper is to explore the formal and informal world of teacher’s workplace learning (WL) in schools operating as learning organizations. Our research is based on the project of the Hungarian Netherlands School of Educational Management, where the schools of the region were assessed in relation to learning organization behaviour (LOB). We will explore formal and informal WL practices in connection with learning organizational characteristics. Analysing the characteristics of WL we hope to contribute to school development.

The research focuses on the following questions: How can formal and informal WL be characterized in schools? What are the main forms of knowledge sharing and cooperation of teachers in schools? What LOB and leadership style supports WL?

Our study is based on the learning organizational behaviour research of the Hungarian Netherlands School of Educational Management. The project aim is to link higher education (teacher education) with schools (teacher practice) regarding the broader labour market. In our study we will explore the theory of WL regarding school context. We use the categories of Brown (2009) who used the following processes describing the results of WL: engagement with challenging work; interaction at work; knowledge at work; self-directed learning at work; identities at work; supporting the learning of others. We found that this typology could be easily applied to school context. We use this theory in the context of learning organization (Senge, 1990), utilizing the results of the Mentor(h)áló project (Anka et al. 2015).

We developed a questionnaire for school leaders and teachers based on a quantitative approach. The research resulted in a database containing 1192 response from teachers from 62 schools. With the secondary analysis of the database we formed variables describing WL according to Brown using exploratory factor analysis with alpha factoring method and varimax rotation. With a KMO Measure of Sampling Adequacy of 0.911, we extracted 4 factors explaining 37.8% of the total variance. The factors could be interpreted in the typology of Brown by joining few categories together.

The produced WL variable explains 46.1% of the variance in LOB which shows us that it could be a very important factor in learning organization development. In details, the following LOBs showed the highest correlation with WL: continuous professional development (r=0.678; p<0.001) and partnership in teaching and learning (r=0.608; p<0.001). Comparing with a well-connected variable (organizational learning) we found a high correlation (r=0.799; p<0.001) between the two variables. Our results shows a great importance of WL in terms of LOB. Our previous study and other studies (Mulford, Silins and Leithwood, 2004) proved the connection between LOB and student learning outcomes and effectiveness of schools. Therefore the better understanding of WL in relation to LOB
we could enrich the curricula of teacher education and teacher training, especially focusing on mentor teacher training which could be a potentially fruitful area for us. From the side of school leadership and development, principals can build on our findings in order to facilitate supportive learning environments in terms of teacher learning at schools, making the implicit side of WL more explicit.

Our study focuses on the rather informal aspect of teacher education: teacher learning in workplace (school-based). The discourse of WL contributes to the topic of in-service learning, mentoring and the development of practice through professional learning communities and schools operating as learning organizations. In the session we would like to explore the various 'hidden' forms of workplace learning of teachers building on the professional practice of participants and also the questions of how can we develop a supporting learning environment via school-based training facilitating workplace learning.

References
51 – Development of a tool for assessing the integration of theory and practice in an online teachers platform

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RDC: Professional Development of Teacher Educators
Subtheme: Innovation

Blog assessment / developmental dialogue / teacher professionalisation

Abstract

Context
In the academic year 2013-2014 a new approach to online learning was introduced at De Nieuwste Pabo (DNP): Student teachers started sharing knowledge and experiences by means of an electronic platform that provides access to a personalised portfolio environment, in which student's professional development is systematically and clearly documented. Innovative is the use of developmental blog-writing as an incitement for student teachers to reflect on their professional development.

A developmental blog can be described as a concise online publication in which student teachers elaborate on educational matter. The quality of blogs is determined by the extend to which practice, theory and educational concepts are intertwined.

Sharing information on various subjects has resulted in a dynamic knowledge base, frequently commented by student teachers and successfully integrated in the educational process.

Problem definition
It would be presumptive to assume that student teachers master this skill as a matter of course (Luken, 2010). Therefore the process of reflecting on professional development must be taught, guided and supervised by teacher educators, preferably by means of a developmental dialogue.

Focus
This paper describes the development and validation of a tool designed to assess the content quality (integration of theory, practice and personal educational concept) of online developmental blogs in an online teacher training platform.

Theoretical framework
Theory is defined as educational content, containing pedagogy, didactics and psychological knowledge (Kelchtermans, 2003). Practice refers to experiences in the field of primary school teacher training and its periphery. Integrated theory and transferable practice merge into a personal educational concept, containing paradigms that control teachers' thinking and acting (Korthagen & Lagerwerf, 2001; Mattson, Eilertsen, & Rorrison, 2011; Patry, 2014). Based on this triad a nine-criteria taxonomy is developed, visualised in the form of a triangle (figure 1).

Methodology
Researchers have assessed 100 blogs, to empirically determine whether personal educational concepts are visible in blogs. After each set of 10 blogs outcome was compared leading to minor changes in the description of criteria. After 70 blogs definitions were redefined resulting in an increase of interrater reliability up to a Cronbach's alpha value of 0.9. After validation, the tool has been employed to assess the internal quality of 100 blogs.
Results
Remarkable is the number of blogs by students in their first year in which only practice is highlighted (76.7%) compared to blogs of students in their last year in which 50% of the blogs that contain a connection between theory, practice and personal educational concept. Although a progression in quality can be seen over the years, future research is necessary to underpin the assumption that increase in the quality of blogs can be expected if teacher trainers collectively apply the assessment tool when writing developmental feedback on students' blogs.

Session
During the paper session we would like to engage in discussion on the intuitive use of the assessment tool by presenting excerpts from developmental blogs to be assessed by the audience.

References
91 – Flipping the classroom in language teacher education

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RDC: Professional Development of Teacher Educators
Subtheme: Innovation

Flipped classroom / action research / global English

Abstract
Introduction
This paper presents a project in which two members of the department of English at Hedmark University of Applied Science in Norway developed a 10 ECT course in Global English for student teachers. We understand our collaboration as a form of action research. One teacher educator (TE1) taught the course, while the other (TE2) acted as peer mentor, observer and data collector. TE1 had taught a similar course twice before, and wished to develop an approach that would encourage students to be better prepared week by week, and thereby increase the possibility of lively and informed classroom discussions. To this end, the course in Global English was designed as a flipped classroom. Being about the delivery of a flipped classroom in teacher education in linguistics, this paper represents an innovation, inasmuch as reports and research on the flipped classroom are usually concerned with the subjects in which the methodology originated: maths and science. Since it is also concerned with colleague-to-colleague action research, it is of particular relevance to the RDC ‘Professional Development of Teacher Educators’.

Aims and research questions
* To explore the potential of flipping the classroom in language teacher education
* To increase student teachers' investment in their studies
* To gain systematic experience of action research
* To model innovative and self-reflective teaching

In this paper, the first two aims are combined to address the research question: How can a flipped classroom contribute to pre-service language student teachers’ investment in their studies?

Methodology
The research data was collected over a full term of teaching, and discussed in weekly meetings between TE1 and TE2. It comprises TE1’s log, TE2’s classroom observations with field notes, two mapping questionnaires, two course assessment questionnaires and final written course evaluation. Supplementary data includes the students ‘Post-It’ notes and place mats (an exam aid), and an interview with the external examiner.

Flipped classroom out-of-class methods
reading prescribed literature, watching TedED talks, contributing to online discussions, making a Kahoot, Quizlet or TedEd

Flipped classroom in-class methods
playing and talking through Kahoots, text analysis and other tasks, group and plenary discussions, ‘I teach-you teach’ PowerPoint presentations
Results
Students varied considerably in their response to the flipped classroom. The majority showed an enthusiasm throughout the term, and one or two quiet students blossomed and became confident contributors. At the same time, most reported having previous positive experience of learning from lectures, and a minority would have preferred to have more lectures also on this course. The level of preparation and the exam results were not as good as TE1 had hoped. An explanatory factor here is the parallel courses that made strong claims on the students’ time. All the same, TE1 reported that teaching this course was far more inspiring than her previous experience of lecture-based delivery.

Conclusion and implications for teacher educators
The flipped classroom has potential in language teaching, but is not a panacea for the many challenges relating to the time that students invest in their studies, an area identified by the Norwegian government as one of particular concern for teacher educators. The action research frame was motivating for both TEs, and supported collegial innovation and peer learning.

To discuss
How can and should we motivate student teachers to spend time learning out of class?

Ensuring interactivity
I will ask two questions to kick off. During the 10-minute discussion, I could show some placemats - student-made aide-memoirs - which formed the basis for the oral exam, and we could discuss what forms of oral examination are compatible with a flipped classroom.
Using authentic assessment in professional modules in teacher education in Vietnam: potential changes from students' perspectives

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RDC: Professional Development of Teacher Educators
Subtheme: Innovation

Authentic assessment / teacher education / Vietnam

Abstract

Authentic assessment has come to the attention of researchers as a desirable assessment tool since the 1980s against the backdrop of the strong criticism that standardised tests were facing at that time (Archbald, 1991). The strength of authentic assessment derives from its potential to develop students' professional skills and because it aims to assess these skills with real-life tasks and criteria (Archbald, 1991, Gulikers et al., 2004). The most recent reform of teacher education in Vietnam suggested to focus on prospective teachers' professional skills therefore the adoption of authentic assessment may be a potential strategy to achieve such goal.

In the processes of educational change, students have proved to be a crucial change agent (Havelock, 1973) because they are the subject of teaching, learning and assessment (Marks and Onion, 2013). Therefore, listening to their voices before implementing change is highly recommended. This paper - part of a larger study - addresses how Vietnamese student teachers experienced authentic assessment in one of their professional modules. Through their responses, the teacher educators can consider the possibility of using this new assessment approach in practice.

This paper presents results of an intervention in which role-play and group assignments are used as authentic assessment methods for formative assessment. The intervention was carried out in two classes in one University of Education in Vietnam. From these two classes, fourteen students (5 females and 9 males) volunteered to take part in semi structured interviews. The interviews aimed at eliciting their perspectives on the assessment they had experienced. The data was audio recorded and fully transcribed and thematic analysis was carried out on the transcripts (Creswell, 2005). The organising network resulting from the analysis of the interviews presents five dimensions: content, context, result, students' involvement in authentic assessment process and its effect to students' learning. Participants appreciate the content of the authentic tasks because it reflects teachers' duties in practice and it improves their understanding of the professional life. Although in role-play the tasks take place in a simulated context, the students were excited about the opportunity to come close to putting their professional competences in practice. They were satisfied with the oral and written feedback they received from lecturers and peers but still they were concerned about the marks they received. Most of the students valued having their own voice heard in the assessment process therefore they were pleased to be involved in many stages of assessment process. However, they also expressed doubts regarding their competences in self and peer assessment. The main finding however is the way in which students describe the change that this item of authentic assessment brought about in their learning: they believe that they changed from being passive to active learners. Finally some concerns were also expressed in terms of the heavy workload of the authentic assessment tasks.

The findings of the study explore Vietnamese student teachers' views of authentic assessment and the potentiality that this assessment has in fostering professional development in a vocational course. It confirms the possibility to use this new assessment approach in teacher education in Vietnam.
References
How do further education teacher educators use modelling within an in-service teacher education programme at an English further education college?

David Powell, SEPD University of Huddersfield, United Kingdom

RDC: Professional Development of Teacher Educators
Subtheme: Professional roles of teacher educators

Further education / modelling / teacher educators

Abstract
This second-person action research study (Chandler and Torbert, 2003, p.142) between a university-based teacher educator, who was the researcher, and a team of six teacher educators from an English further education college explored the ‘teacher of teachers’ role of the teacher educator (Lunenberg et al., 2014). Specifically, it sought to answer the research question: how do further teacher educators use modelling within an in-service teacher education programme? To answer this question, four of the teacher educators agreed to have one of their classes filmed, then participate in a stimulated recall interview to illuminate their pedagogical thinking and decision making (Calderhead, 1981). Adopting a bricolage approach (Kincheloe, 2004), the data collected was then analysed using two frameworks: Lunenberg et al.’s (2007) four forms of modelling, which enabled the modelling to be classified and counted, and Kemmis et al.’s (2014) theories of practice architectures, a contemporary theory of practice, which enabled the researcher to analyse ‘the sayings, doings and relatings’ of the behaviour or value that was being modelled. ‘To ensure the credibility of the findings' (Fitzgerald et al., 2013, p.989), the researcher invited each of the teacher educators to ‘member check’ (ibid) the researchers’ analysis and interpretation of the filmed class. These ‘checked' findings are presented in terms of the behaviours and values that were modelled (Lunenberg et al., 2014); the forms of modelling used by the teacher educators, and ‘the sayings, doings and relatings' Kemmis et al., 2014, p.34) of the teacher educators’ modelling. The principal findings are that over 60% of the modelling observed in these four classes was implicit and that the most frequently modelled teaching behaviour (Lunenberg et al., 2007) was the use of questioning strategies. Where explicit forms of modelling were used, it was explicit modelling with a ‘metacommentary' (Wood and Geddis, 1999, p.107) that was most evident. This study adds to the existing research on modelling and contributes to what is known about the ‘teacher of teachers' role of teacher educators, particularly those working in further education colleges in England. And its findings have relevance for the professional practice and professional development of teacher educators. Finally, it raises the question of why so much modelling by teacher educators might be implicit and the paper will conclude by exploring and debating it.

References


61 – The swampland and further education based teacher educators in England. What sustains or suffocates their use of modelling with their in-service student teachers?

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RDC: Professional Development of Teacher Educators
Subtheme: Professional roles of teacher educators

Further education based teacher educators / modelling / swampland

Abstract
Murray's (2012, p.20) suggests that 'Teacher education as a field belongs to what Schön (1987) characterised as the 'swampy lowlands of professional practice'. This paper ventures into the swampland of further education initial teacher education and asks: What factors affect further education based teacher educators' use of modelling with their in-service student teachers? Using Kemmis et al.'s (2014) theory of ecologies of practices as its conceptual and analytical framework, the paper considers how the five dimensions of practices - student learning, teaching, teachers' professional learning, educational leadership, and researching - 'can sustain...or suffocate' (p.50) further education based teacher educators' use of modelling at a further education college in England. Working with a team of six teacher educators, the researcher, a University-based teacher educator, used six data instruments to answer the research question. These were a film of the teacher educator teaching their students; a stimulated recall interview with the teacher educators (Calderhead, 1981); semi-structured interviews with the teacher educators; focus groups with the teachers educators' students; recordings of meetings that capture the 'teacher talk and conversations' (Hardy, 2010, p.131) between the team and the researcher, and a pro-forma to record the teacher educators' continuous professional development before and during the study. Building on Boyd's notion of teacher education as a layered pedagogy (2014, p.56), the findings of this study suggests that modelling and its use occurs at the intersection of a teacher educator's skills as a practitioner, their professional knowledge, and their professional identity, and that also shaped by the other four practices at the site and the policy landscape. For instance, the appointment and induction process determine teacher educators' understanding of their new professional role, particularly what modelling is, how it contributes to student learning and how it fits into their role as a 'teacher of teachers' (Lunenberg et al., 2014). Also significant are the student teachers' metacognitive abilities and an initial teacher education curriculum which has become ‘factorised’ (Lawy and Tedder, 2009, p.53), evidencing 'the hegemonic dominance of neo-liberal policies' (Groundwater-Smith et al.'s, 2013, p.129) and how this is suffocating further education based teachers educators' practice (Kemmis et al., 2014). Importantly, data and analysis from one of the filmed classes, where a “debriefing teaching” model (Loughran and Berry, 2005, p.196) had been used, suggest that the teacher educators involved would have benefitted from more opportunities to practise and employ this approach, which was new to them, reinforcing the point Vygotsky (1978, p.34) made that 'a person can only imitate that which is within their developmental level' at the time. The findings of this study has implications for the induction, professional practice and professional development of further education based teacher educators in England, other teacher educators and managers of teacher educators. The session will conclude by asking: What is the nature of the swampland where we work as teacher educators? What impact does this have on our roles and work?
References
111 – Autonomy and Collaboration for the Professional Development of Teacher Educators

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RDC: Professional Development of Teacher Educators
Subtheme: Professional roles of teacher educators

Autonomy / collaboration / professional development

Abstract
According to the literature on professional development (Schön, 1990; Hargreaves, 2000; Korthagen, 2004; McKenzie, 2005; Kennedy, 2005) one of the key conditions for professional development is collaboration and collegiality. However, there are still many open questions e.g. if collaboration itself can lead to professional development, or to what extent autonomy is needed for expert teachers' learning, and above all what is the ideal proportion of autonomy and collaboration in professional development?

In the framework of an explanatory study our aim was to understand how autonomy and collaboration for professional development are interpreted in the context of teacher education, and to analyze the connections between the way teacher educators are learning and would like to learn and be supported in the Hungarian higher education context. In order to understand the specific ways of learning of teacher educators among university teachers a comparative study design was conducted.

The main questions of the study are: 1) what kind of differences can be depicted between teacher educators and other university teachers in their practices of professional development and the perceived and expected support for it? 2) Are there specific patterns of collaboration for professional development among teacher educators comparing to other academics?

Based on our research a questionnaire was developed. It was partly adapted from the Survey for Teaching and Research Staff (2014) and partly it was developed by the Hungarian authors based on the special teaching, curriculum development and professional development practices of university teachers and teacher educators in Hungary. It focuses on three major themes: 1) teacher educators' and other university teachers' perceived teaching competencies and practices of professional development; 2) the perceived departmental support; and 3) the expected support for their professional development. The questionnaire was filled in by 672 university teachers, of which 282 (41.96%) were teacher educators.

The results show that the most frequent sources for professional development were students' feedback, informal discussions with colleagues and experimenting. Teacher educators were slightly more committed to students' feedback than other university teachers but the main significant differences remained in the purposive activities for professional development, namely trainings, development projects, research on teaching which were more common among teacher educators. Teacher educators and other academics equally perceived teaching as highly supported by their departments and considered the voluntary collaboration between colleagues of highly importance. Only in curriculum development activities perceived teacher educators more active themselves than other academics.
Teacher educators and other university teachers indicated as most relevant for their future formal professional development to support students' engagement and motivation, interactive methods, and developing students' critical thinking. Both groups found that formal trainings, web-based resources and observing new teaching methods are the most important for their further professional development, but teacher educators consider as the most significant preference learning via research and development project, workshops.

Our results only partly confirmed the specific ways of professional development of teacher educators. The most specific features of teacher educators' professional development were that they found more relevant the autonomous and deliberative ways of professional learning such as development projects, research on teaching and participated significantly more in curriculum development activities. In collaboration for professional development only minor positive differences are identified compared to other academics. This study can contribute to tailor better to teacher educators' needs the activities and support of professional development in higher education.

Questions for discussion
What is the ideal proportion of autonomy and collaboration in professional development of teacher educators based on the research findings, theories, and experiences?
What are the main differences in professional development and learning of teacher educators and other university teachers?

References
Reconceptualising teacher education: peer-mentoring to educate the best teachers

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RDC: Professional Development of Teachers
Subtheme: School-based teacher education

Career-long professional learning / peer-mentoring / system, culture and practice change

Abstract
In a context of increasing demand for quality and equity in education and a sharp focus on accountability, classroom teachers are expected to support and improve learning outcomes for pupils in response to their individual needs (OECD, 2013). To sustain such improvements, they need strong theoretical frameworks that will help them to make principled changes to their practice (Mansell and James, 2009). However, they often hold deeply rooted views on learning and teaching that can inhibit change, finding it challenging to understand the complicated and dynamic interactions amongst curriculum, assessment and pedagogy and the learning environment to support pupils' learning.

Support for teachers to uncover and confront their prior beliefs about learning and teaching and reflect on their impact on decisions made in the classroom is seldom an integral element of professional development (Livingston, 2015). More needs to be understood about teachers as individual learners and the conditions that best promote their learning in school, as well as their pupils.

Aim
This paper aims to stimulate thinking about a reconceptualisation of teacher education and about the role of peer-mentoring in educating the best teachers in school.

Research Question
How does peer-mentoring support and challenge teacher learning in schools?

Methodology
The interactive presentation will draw on empirical data collected during a research and development study focusing on peer mentoring. The data was collected through analysis of mentor reflective logs and semi-structured interviews held with a group of mentors participating mentor training in schools in one local authority in Scotland. The research approach was interpretive and the data collected were qualitative. The study developed from both theory and practice. It draws from socio-cultural theories of learning (Vygotsky, 1978); adult learning theories (Mezirow, 1997) and professional learning communities (Wenger, 2010). It also developed from a practical problem identified in previous peer-mentoring studies (Livingston and Shiach, 2013 & 2014) - how to develop and sustain quality mentoring in schools in the context of career-long professional learning (CLPL).
Results and conclusion
The analysis of the results of the mentoring study show significant development in the teachers understanding of learning and teaching. In particular the study highlights the importance of high quality learning conversations between teachers using evidence from collaborative analysis of pupil work. The conclusion recognises the importance of conditions to enable high quality teacher education in school, from two interacting perspectives: i) Starting from the inside: CLPL in classrooms and schools and ii) Working outwards: a national framework for CLPL.

Significance
The presentation's significance is twofold: it aims to enhance understanding of the importance of developing and scaffolding quality learning conversations among teachers that support and challenge them in making meaning of individual pupils' work and in using evidence to make decisions about next steps in learning and teaching; and it emphasises the importance of a dynamic sustainable framework of CLPL that recognises the individuality of teachers' learning needs and the consequent need for tailored professional learning opportunities with different combinations of support and challenge at school, local and national levels. The session is directly relevant to the theme of the conference in that it focuses on how to educate the best teachers through teacher education in school and it is relevant to the work of the RDC on the Professional Development of Teachers.

Group interaction
The participants will have the opportunity to work in small groups to analyse and discuss a short vignette of a mentoring problem and consider collaboratively how peer-mentoring strategies could support and challenge teacher development in schools. They will also have a whole-group plenary discussion to consider the system, culture and practice change to reconceptualise teacher education in schools.

References
Continuing Professional Development: The reality of the workplace - how do we engage teachers?

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RDC: Professional Development of Teachers
Subtheme: School-based teacher education

Engagement / professional learning / teachers

Abstract

Continued professional development for teachers, whether they teach in primary, secondary, tertiary education or in other educational settings, is essential more now than ever before, given recent technological advances and the rapidly evolving, mobile 21st century student profile. These students have access to a plethora of information and experience, and they are learning in a neo-liberal society that values education as a commodity, where students have a loud voice. This new approach to education is often different to what the teachers themselves experienced and, as such, it is important for these teachers to continue learning and adapting their skills in order to address this gap in understanding.

However, filling this gap is not about informational learning alone e.g. implementing technology in the classroom. It also encompasses transformational professional learning such as asking teachers to reflect on and confront long-held beliefs and practices, which can be an uncomfortable process.

There is ample literature addressing collaborative learning, Professional Learning Communities Stoll et al (2006) and situated learning (Wenger 1998) with 'ideal' criteria on how to implement these. However, if all of these were suitable for the workplace, why do institutions still face so many challenges in engaging their teachers in professional learning? Therefore, an understanding is needed of how to engage teachers in the reality of the workplace, which can often include teachers from different cultural learning backgrounds and with different qualifications.

The study is the pilot of a larger study concerned with the factors that can effect engagement in professional development. To address this, an interpretivist research approach gathering mainly qualitative data from 4 English language teachers working in different countries. Phase 1 involved an initial pre-interview questionnaire to gather information about the teachers’ learning histories and an opportunity for short pre-interview reflections about professional learning. Phase 2 involved semi-structured interviews, with one of the themes specifically addressing the area of engagement in professional development. Phase 3 involved further reflections, post-interview.

These initial findings from this pilot study will be a springboard for a discussion on factors that can enhance and inhibit engagement in professional development and learning and will be of interest to teacher educators and teachers in many disciplines by offering a perspective on how to address teachers' professional learning needs from understanding their perceptions of what engages them.

References


Asking the right questions: are the benefits of modelled reflective thinking through public collaborative reflection also evidenced when reflecting on an individual level?

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RDC: Professional Development of Teachers
Subtheme: School-based teacher education
Questioning / reflection / scaffolding

Abstract
A recent study has shown that modelling questions that encourage reflection-on-action, combined with engagement in public collaborative reflection had a positive impact on participants’ reflective awareness, shifting reflection from being mainly routine and technical at the start of the study, to one which is more dialogic and transformative/critical. During public collaborative reflection, scaffolding of learning was also evident, and participants (student-teachers during teaching practice rounds) increasingly started to theorize their practice. Participants also started formulating their own questions which helped them delve deeper into various aspects of the teaching profession. This study is a follow-up to the one described above. The aim is to investigate whether such benefits observed in public collaborative reflection are transferred and are therefore also observed in the participants’ personal reflective journals that contain reflective writing on an individual level. To answer this research question, the reflective journals of the previous study’s participants were gathered and analysed. Their individual reflections written during the same periods were collaborative public reflection was being promoted in a learning community were taken into consideration. Findings suggest that the shift from routine and technical reflection to more dialogic and transformative/critical reflection, was also observed in individual reflections. Student-teachers however tended to focus much more on the particular and less on generic concepts in individual reflection, although the latter were also present in individual reflections. It is also worth noting that although questions were not specifically written, and were therefore less evident than in public collaborative reflection, participants frequently entered a conversation with oneself where they tried to reflect and answer their own doubts and uncertainties related to professional practice.
Types and Dimensions of Conflict and Emergent States in Intra-Teams of Pre-service Science Teachers During Authentic Science Projects

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RDC: Science and Mathematics Education
Subtheme: Innovation

Authentic Science Projects / conflict types and dimensions / team performance and viability

Abstract
Over the decades, science educators heavily relied on student learning outcomes as a result of motivating and guiding students to do inquiry in small groups rather than what happened in student teams during authentic science projects. There are many factors that influence team performance such as the ambiguity of the tasks, escaping from responsibility, less intra-team cohesion and conflict. The purpose of this study is to investigate the types and dimensions of conflict that pre-service science teachers (PSTs) faced, what kinds of relationships between the conflict and emergent states are, and how these relationships affect the team performance and viability while the PSTs develop, do and report their authentic science projects.

This longitudinal study was carried out with 33 (23 female-10 male) PSTs. In the beginning of the study, PSTs decided on their team members, and so fourteen teams were spontaneously formed. All teams took two courses in relation to Nature of Science, including laboratory courses, both semesters. The courses for all PSTs teams were designed based on argumentation through a blended learning environment (BLE). The main goal of all courses accompanied by 'Scientific Research Apprenticeships' is to help PSTs develop, conduct and report authentic science projects. Before developing their own projects, PSTs scrutinized thesis, research articles and projects from different science disciplines and then discussed each other on them in the BLE. They then started identifying their individual research topics and wrote their project proposals and evaluated their own research proposals as self and peer assessors, including tutor assessment. Finally, each team of PSTs decided and made necessary revisions their team project based on the obtained feedback. Subsequently, each PST team carried out their research in laboratories across the campus and R&D departments in factories in Organized Industrial Zones across the city. PST teams, guided by their mentors, did experimental and observational studies when they collect, analyze and interpret the data regarding their research questions during the implementation phase of their project. At the end of the implementation phase lasting 3-4 weeks for each team, PSTs wrote their project reports to send them to an online journal, entitled 'Journal of PST Research'. Intra-group Conflict Scale (ICS), semi-structured individual interviews and an open-ended questionnaire were used as data collection tools at the end of each semester.

The quantitative data obtained from the ICS from the first to the second semester were analyzed using parametric statistical tests and, all qualitative data were analyzed to explore the conflict types and dimensions, emergent states, and effects of these on performance and viability for each PST team both semesters. Results indicated that there was a statistically significant decrease in task conflict, while a significant increase in process conflict, including no change in task conflict, from the first to the second semester.
Results of the qualitative data analyses showed that PSTs initially faced relationship and task conflict; however, they experienced mostly process and task related conflict toward the end of the study. PSTs intensively encountered process conflict that is how to increase their team success and how things should be done better during the second semester after they were more familiar with how to solve disagreements and incompatibilities among their team members in relation to personal issues and opinions about the task during the first semester. Findings especially indicated that relationship conflict in PSTs’ teams that negatively affected their emergent states (e.g., positive motivation, trust and respect) led to a decrease in team performance and viability during the first semester. However, it was found a decrease in relationship and an increase in task and process conflict among PSTs that positively affected their emergent states in intra-teams improved team performance and viability during the second semester.
The Impact of Effective Blended Learning Environment on Pre-Service Science Teachers’ Views About New Aspects of Nature of Science: Features of Science and Family Resemblance Approach

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RDC: Science and Mathematics Education
Subtheme: Innovation

Effective Blended Learning Environment / Family Resemblance Approach / Features of Science

Abstract
Over the past three decades, most research in science education has focused on exploring, promoting or monitoring students’ views of nature of science (NOS). However, there is a recent debate about what NOS is since science is so rich and dynamic, and includes many sub-disciplines. Therefore, NOS has been interpreted again, and scholars have suggested new or missing aspects, entitled ‘Features of Science (FOS)’ and ‘Family Resemblance Approach (FRA)’, to the existing aspects of NOS. The purpose of this study is to investigate the impact of Effective Blended Learning Environment (EBLE) on pre-service science teachers’ (PSTs) views about FOS and FRA as new aspects of NOS. This longitudinal study was carried out with 43 (32 female-11 male) PSTs. In the beginning of the study, PSTs were randomly assigned to control and experimental groups and took two courses regarding NOS both semesters. Views of the FOS and FRA Questionnaires developed by the researchers as data collection tools were administered to all PSTs as pre-mid-post tests. Semi-structured individual interviews were carried out with all PSTs immediately following each test. PSTs learned the targeted aspects of FOS and FRA using argumentation as a learning strategy accompanied by explicit-reflective approach in all courses. The courses for the experimental group of PSTs (EG-PSTs) (N=23) were designed based on the EBLE consisting of the following learning environments: face to face (F2F), online (OL) and out-of-school-time (OST), while the same courses for the control group of PSTs (CG-PSTs) (N=20) were designed according to F2F and OST environments. OL comprised four main sub-environments: Moodle, Mahara E-portfolio, Web-Authentic Assessment System (Web-AAS) and E-Journal. EG-PSTs participated to weekly discussions involving in the aspects of FOS and FRA through Moodle; kept their reflective journals, self-assessment and multimedia products in Mahara; developed research proposals in F2F and OST environments and evaluated their research proposals as self and peer assessors, including tutor assessment, via Web-AAS; managed their projects during the implementation phase of their research and wrote their articles using Moodle for all edits as a small group; sent their articles to E-Journal entitled ‘Journal of PST Research’ and took the following roles: author, referee and editor during the review process of their articles. All PSTs in both groups had the same content and the same assignments. Accordingly, for CG-PSTs, the same learning objectives or outcomes in relation to FOS and FRA were accomplished by F2F and OST environments through traditional paper-pencil activities. All data obtained from the open-ended questionnaires and interviews were analyzed in a holistic approach to develop pre-mid-post profiles for each aspect for each PST. The targeted FOS and FRA aspects from the literature served as initial codes in the analysis. PSTs’ responses to the questionnaires and interviews were considered, compared and contrasted for an overall representation of a position relative to the targeted aspect. These profiles were then compared and represented on a FOS and FRA views continuum to characterize shifts for each participant. For the analysis, degrees of understanding were based on a continuum representing a range of views from ‘naïve’ to ‘more informed (i.e., less informed (+)/more informed (++)/even more informed (+++))’.
Results indicated that PSTs initially usually held naïve FOS and FRA views, and there was not a noticeable difference between PSTs of the control and experimental groups from pre- to mid-tests. However, posttests showed increases toward almost all targeted aspects in favor of PSTs in the experimental group. EG-PSTs were able to connect FOS and FRA with multiple science examples. This study suggests that learning through EBLE versus F2F and OST may facilitate PSTs' understandings about the aspects of FOS and FRA.
Changes in Pre-service Science Teachers' Views About Scientific Inquiry in An Effective Blended Learning Environment

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RDC: Science and Mathematics Education
Subtheme: Innovation

Effective Blended Learning / Pre-Service Scientific Teachers / Scientific Inquiry

Abstract
In various reform documents and curriculum standards, it is emphasized that students should develop informed views about Scientific Inquiry (SI) and Nature of Science (NOS) as a main goal of science education. Although SI and NOS are dependent on each other and so used interchangeably, there is a difference between them. Most scholars agree that research focusing on SI in comparison to NOS is very few. In this study, we examined the impact of effective blending learning environment (EBLE) designed based on social constructivism on pre-service science teachers’ (PSTs) views about SI. 43 (32 female-11 male) PSTs participated to this longitudinal study during the following two semesters. The PSTs randomly assigned to control and experimental groups and took two courses each semester lasting 15 weeks. Views About Scientific Inquiry (VASI) was administered to all PSTs as pre-mid-posttests. In addition, semi-structured individual interviews were carried out with all PSTs following each test in order to clarify PSTs' understandings about SI. PSTs learned the targeted aspects of SI based on argumentation as a learning strategy accompanied by the explicit-reflective approach. The courses for the experimental group of PSTs (EG-PSTs) were designed based on the EBLE consisting of the following learning environments: face-to-face (F2F), online and out-of-school-time (OST), while the same courses for the control group of PSTs (CG-PSTs) were designed according to F2F and OST environments. Integration of F2F with OST environments in the courses allowed PSTs to develop, implement and report their long-term authentic research projects within the context of science apprenticeship that scientists, practitioners and experts provided guidance to PSTs throughout the implementation of their projects. There were four main environments for online learning (OL): Moodle, Mahara E-portfolio, Web-AuthenticAssessmentSystem (Web-AAS) and E-Journal. OL within the EBLE served as a bridge between F2F and OST environments for the EG-PSTs. EG-PSTs participated to weekly synchronous and asynchronous discussions involving in the aspects of SI through Moodle; kept their reflective journals, multimedia products related to scientific apprenticeship process and research projects (e.g., digital video, photographs, research articles) as portfolio artifacts in Mahara; developed and evaluated their own research proposals as self and peer assessors, including tutor assessment, via Web-AAS; carried out and reported their science projects as research articles; sent their articles to E-Journal and took the roles of author, referee and editor during the review process of their own E-Journal. All PSTs in both groups had the same content and the same assignments involving in the targeted aspects of SI. Accordingly, for CG-PSTs, the same learning objectives or outcomes in relation to the targeted aspects of SI were accomplished by F2F and OTS environments by means of traditional paper-pencil activities. All data obtained from the VASI and interviews were analyzed in a holistic approach to develop pre, mid and post profiles for each aspect for each PST. The targeted SI aspects from science education literature served as initial codes in the analysis. These profiles were then compared and represented on SI views continuum to characterize shifts for each participant. For the analysis, degrees of understanding were based on a continuum representing a range of views from 'naïve' to 'more informed that is a multiple '+' system.
that indicates relative degrees of informed views'. Results indicated that PSTs initially held naïve views about SI, and comparison from pre- to mid-intervention showed that there was no noticeable difference between EG-PSTs and CG-PSTs. However, posttests showed improvements in almost all targeted aspects in favor of EG-PSTs. EG-PSTs were able to connect SI with multiple examples from different science disciplines. This study suggests that learning through EBLE versus F2F and OST may facilitate PSTs' understandings about many aspects of SI.
120 – Preservice teachers' preparation to teach with technology: case studies of Finland and Israel

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RDC: Teacher Education and Digital Technology
Subtheme: Innovation

Abstract

Introduction
Technology has penetrated every aspect of life, also schools. Consequently, there is an increasing pressure for teachers to incorporate information and communication technologies (ICT) into school teaching. Therefore, teacher education institutions have to prepare student teachers for future professional practices by developing ICT-based teaching competencies and Pedagogical Technological and Content Knowledge (TPACK; Mishra & Kohler, 2006).

Traditionally, teacher preparation programs addressing these needs include different components: courses dealing with educational technology, reference to ICT within methods courses, and modeling of ICT-based teaching by teacher educators and school mentor teachers (Goldstein et al., 2012; Gronseth, Brush, Ottenbreit-Leftwich, Strycker, Abaci, Easterling et al., 2010). In Finland, Meisalo and his colleagues (Meisalo & al. 2010) studied the use of ICT in the initial teacher education. It was found that motivation to apply ICT in teaching by both student teachers and teacher educators was high. Student teachers reported having help available when needed. However, wishes for more cooperation between teacher educators was also expressed. Student teachers also told that the schools seemed sometimes to be more conservative than the expressed intentions of the mentors. Gronseth et al. (2010) studied the curriculum in 407 Teacher Education Colleges in the United States and found that the majority of them include an educational technology course (in 80% of institutions), include the topic in methods courses (80%) and require students' engagement in field practice (60%). Numerous studies which examined the quality of pre-service teachers ICT-based teaching skills found that they incorporate ICT in teaching mostly in ways that reinforce traditional teaching methods (Black, Smith & Lamshed, 2009; OECD, 2010). Researchers explain these findings by the inadequate modeling by faculty members and school mentor teachers; few courses dealing directly with development of TPACK; lack of implementation in school practice; limited cooperation between the schools and colleges; and insufficient infrastructure (Beaudin & Hadden, 2005; Black et al., 2009; OECD, 2010).

The present study examined the status and differences in preservice teachers education to teach with ICT in two different countries - Finland and Israel. Teacher Education systems in both countries undergo systemic reforms. In Finland teacher education reform is related to adoption of a new National Curriculum Framework in the Fall 2016. In this curriculum coding has been added into mathematics from the first grade. In Israel, a new National Initiative was launched aimed at transforming Teacher Education to meet the demands of the 21st century. This initiative emphasized the need to develop 21st century skills: ICT literacy, critical thinking, inquiry and problem solving, self-oriented learning, communicating and teamwork, ethics and cybernetics.
Research
The data were collected using a questionnaire developed by Oster, Goldstein & Peled (2015). It included 14 closed-ended questions aimed at gathering data on modeling by faculty members and school mentor teachers, students' experiences in teaching ICT-based lessons in school, TPACK, the attitudes towards integrating ICT in teaching, and the pre-requisites (infrastructure, access to computers and the internet, availability of technical support), school students gain experience in teaching and the homes of students. Also, the questionnaire included open questions where students were requested to describe a lesson with the successful integration of ICT by faculty members, by school mentor teachers and students themselves; and difficulties they encountered in schools in teaching with ICT. The sample included about 200 students from the University of Tampere (Finland) and Kaye College of Education (Israel).
In our presentation, we will present the core findings of the research and discuss implications for preservice teacher education.

References
Investigating Secondary Teachers' Perceptions of Learning Computational Thinking through Games Design: A case study in Ireland

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RDC: Teacher Education and Digital Technology
Subtheme: Innovation
Computing / gamification / programming

Abstract
Computational thinking (CT) has received renewed interest in more recent years. For some, CT is the skill of the 21st Century ranking alongside reading, writing and arithmetic as a core skill; for others it is a precursor to programming but does not equate to computer science (Lee et al., 2011). Terms such as mathematical thinking, or algorithmic thinking, the thinking skills associated with engineering science or design are viewed as encapsulating the concepts inherent in term ‘computational thinking’ (Cooper, Perez, Rainey, 2010). Wing (2006) defines computational thinking as ‘describing a set of thinking skills, habits and approaches that are integral to solving complex problems using a computer and widely applicable in the information society.’ Through this definition, a clear association is made between the process and the tools being used to support the process, namely a computer.

Cuny, Synder and Wing (2010) define CT as comprising the use of three processes when problem-solving: abstraction, automation, and analysis. The use of algorithmic processes to define, understand and solve problems is core to the current UK Programme of Study for Computing (DfE, 2013) which states that at the heart of computing 'is the science and engineering discipline of computer science, in which pupils are taught how digital systems work, how they are designed and programmed, and the fundamental principles of information and computation.' (p. 3)

This paper adopts a social constructivist view to introducing programming to teachers who had expressed an interest in learning how to build a simple computer game in either Scratch, GameMaker or Greenfoot. As the teachers were located across a broad geographical area in Ireland, an online course hosted in the Fronter VLE platform was used to ‘virtually’ connect the teachers and facilitate any collaborative discussions around the series of tasks designed to scaffold the learning of the chosen programming language. A number of key questions were posted in the discussion fora to encourage these teachers to reflect on the processes of learning to program, to identify the CT skills being developed through the series of tasks to be completed online, and to discuss if designing a simple game was a suitable context in which to learn the programming language. In addition, questions were asked to determine if the use of gamification, a ‘rewards system’ embedded in the VLE course design, acted as a motivator when participating in the course.

Analysis of the data indicates learners’ had a positive experience when working online. Females enjoyed the linearity and scaffolding embedded in the course more than male participants who felt it diminished the potential for creativity. All participants agreed they had a strong grasp of the programming language at the end of the course. Many of the CT skills were addressed during the creation of the game such as algorithmic thinking and sequencing during the storyboarding phase and also debugging to test each procedure was functioning correctly. Automation appeared in repeated contexts such as the cases of iteration or recursion in the code. For example, repeat loops, the IF….THEN….ELSE statements, WHILE…DO commands were all present in many tasks. The scoring
and lives required the incorporation of variables and addressed the generalization aspect of abstraction. Despite their presence in the tasks, there may have been insufficient attention centred on these key command structures to make them clearly recognizable by the learners as CT skills. In addition, the choice of programming languages may have limited the ability to address the five core features and techniques relevant to programming. Most learners stated they were positively disposed to the inclusion of gamification in the learning process as a tool for motivation.

References
196 – Effectiveness of the education social network in career development of the teachers

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RDC: Teacher Education and Digital Technology
Subtheme: Innovation

Educational social networks / professional development of teachers / web 2.0

Abstract
The main aim of this activity is to test the effectiveness of the educational social network in career development of the teachers. The scope of the study, a social network site can be accessed from the address 'www.mavikurdele.net'. The application was used by 62 teachers at a high school and at a secondary school in the province of Afyonkarahisar in the first semester of 2015-2016 education year for 6 weeks. After the application, the data was collected through survey of social networking application to ensure the professional development of teachers. In the research, while examining the data, descriptive statistics were used. The study showed that teachers generally have a great tendency for using the social network and they often used the social network to share, communicate and be in cooperation.

Specific questions
This study aimed to examine the effectiveness of the educational social network in career development of the teachers. The following research questions were investigated:
What is the level of material sharing, communication and cooperation in the professional development of a social network developed to be used for professional development of teachers?
The study was conducted with teachers at a high school in the province of Afyonkarahisar in the first semester of 2015-2016 Education year and in Türk Telekom Science High School and Mehmet Yagcioglu Secondary School for 6 weeks.

In the study simple random sampling method was applied in selecting the sample and one group and post-test model was carried out. In the school which the study was conducted in, all the teachers were interviewed and the social network was explained. The teachers who were volunteer for applying the network were asked to log in social network. According to the social network's records, 61 teachers began to use the social network. The survey was made up of this component: survey of social networking applications to ensure the professional development of teachers. The data were analyzed with quantitative methods and presented with frequency and percentage tables.

In the survey there are 30 items related with the social networks contributions on teachers’ professional development. These items were answered and the teachers chose options Yes/ Partially/ No.

The focus of this study was to determine availability of material sharing, communication and cooperation of the social network. Analysis of the study showed that teachers generally have a great Tendency for using the social network and they often used the social network to share, communicate and be in cooperation.
Teachers who cannot be in contact with colleagues with a busy schedule have brought feelings of sharing, communication, cooperation to the virtual environment through educational social networks. This compulsory position has also led to the emergence of new training formations. Educational social networking applications do not only offer an important contribution to all areas of education but also acquire an important place for the career development of teachers.

Innovation is the most important one for the teacher educators. Educational social networks are innovative way for them in order to improve education. How can teacher (educator) research support the innovation of (teacher) education?

For the interactive sessions, as our topic is related with educational social network, inviting for discussing on social media especially on mavikurdele.net is one of the interactive sessions. Demonstrating and asking audience is the other way for making audience active in the research.
As teacher educators, how can we promote trainee teachers' genuine reflective-in-action? Introducing a PIT stop approach

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RDC: Teacher Education and Digital Technology
Subtheme: School-based teacher education

PIT stop / reflective practice / teacher education

Abstract
This paper aims to promote debate over the value of post-lesson reflection among trainee (student/pre-service) teachers.

In many teacher education programmes around the world, trainee teachers are typically expected to complete post-lesson evaluations and reflective journals, in which they analyse strengths and areas for development in their practice. While this form of reflection is popular (Moon, 1999), it is increasingly recognised that we need to develop new ways of thinking about reflection that recognise the complexities and relational qualities of practice (Boud, 2010).

As teacher educators, we share the common goal of promoting critical reflection among trainee teachers, as a vehicle for improving their practice. However, at times this can be perceived as a formulaic, superficial process. As one trainee told us ‘It’s just another form that we have to complete’. We are interested in refocusing teacher education on what Schön called reflection-in-action or what we refer to as ‘PIT stop’ reflection.

In our proposed model, trainee teachers and observers would each be able to call for a brief ‘PIT stop’ in any observed session. During the session, the trainee teacher (or observer) would signal the desire to pull over to the side of the classroom to quietly talk through a particular issue. This could be related to classroom management, subject knowledge, pedagogy, assessment or any other pressing matter. The PIT stop is not a time for prolonged conversation but Precise, Insightful and Timely action. In our paper we will expand upon the model and invite contributors to work alongside its future development.

We will discuss the potential benefits and challenges of implementing the model to (a) teacher educators (b) the trainees (c) the children. We will also discuss the potential role of technologies in enhancing the quality of reflective practice, such as the use of video, audio and digital still images. Initial feedback from trainees suggests that they highly appreciate on-the-spot reflective discourse. They see this as relevant, meaningful and genuinely a formative process that drives their professional development.

References
The use of video in a teacher training course to promote the correct use of formative assessment for improving Mathematics teaching and learning

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RDC: Teacher Education and Digital Technology
Subtheme: School-based teacher education

Formative assessment / teacher training / video analysis

Abstract
In the last years the teachers' professionalism is an important topic of international research; this has been central in the matter of teacher training, as a strategic factor to improve the national educational systems.
In particular, a good part of the scientific debate about teachers training activities seems to focus on a fundamental 'crux' given by the relationship between theory and praxis, between knowledge and competences, i.e. by the research of how to train the teachers in such a way to get that the information they gain will really develop into new behaviours and competences that will enter into play in their everyday teaching practices.
There are several different contributes to this debate, based on interdisciplinary studies, that seem to validate the idea that a fundamental step for the professionalization of teachers is the identification of the most suitable ways to conceptualize their explicit practices in teaching by means of recursive processes, integrated and interdependent among them (observation, comprehension, anticipation or prediction of what happens and can happen after a specific action).
From here some indications derive about the most effective methodologies to promote the co-presence of theory and praxis in the teachers training (both in-service or pre-service). Such are many techniques that can be based on the use of specific support tools, as, in particular, the videos.
Several studies, moreover, confirm the effectiveness of video-based interventions in the training of teachers: the video become a tool which is able to integrate and support, via the visual activity, the direct observation and the learning of good teaching practices of which, otherwise, there could only be a description, oral or written.
Following these ideas, our project of research is aimed at the elaboration of a pilot model of a course for mathematics teachers that should integrate and use the analysis of videos made in class with teachers involved in the project with different modalities.
The project of research is the LLP Comenius 'FAMT&L - Formative Assessment in Mathematics for Teaching and Learning' and it is aimed to promote the use of formative assessment in teaching mathematics to students aged from 11 to 16.
The research started in 2014 with an observational study carried out by a plan of systematic observations of teachers' behaviour in the classroom with the help of video recording. Thanks to a specific tool of video analysis (a structured grid), developed using indications from international literature and experiences of teacher training in the five Partner countries involved (Italy, France, Holland, Switzerland, Cyprus), we managed to gather many different indicators on good and bad practices of formative assessment carried out by Mathematics teachers.
A significant number of analysed video sequences are archived in a web repository, integrated with an e-learning platform in which will take place videos and other materials which could be used in several different activities (in presence or in distance), as: activities of self training (for expert teachers) or training activities, where teachers are guided using analysed videoes to promote development of assessment skills.
With our contribution we would show some case of the specific use of video in our training course. The ultimate goal of our project would be that of improving teachers' skills in the use of assessment practices and this seems to be entirely coherent with the theme of this year's conference. In the interactive session, we would to present our web repository and platform showing one or more cases of videos' use. In this way we will ask the contribution of attendants to have suggestions to improve the quality of training and to implement the two virtual environments for future courses.

References
Collaborative curriculum development and meanings given to it by teachers

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RDC: Technical and Vocational Teacher Education (TVTE)
Subtheme: Innovation

Competence-based / interpretation / professional growth

Abstract
This study deals with competence-based curriculum development in higher education, in universities of applied sciences. Competence-based curricula have been launched with the Bologna process into European higher education during the last two decades. This is generally due to the aim to move from subject-centered to more student-centered curricula.

Curriculum development started with the idea of participatory education to strengthen the teachers' agency. The administrative view was to implement the competence-based curriculum and new assessment criteria and to ensure their putting into operation. My idea as a responsive planner and head of the project was to offer a forum of interaction.

The theoretical frame of this study is constructed on the basis of curriculum theory and the change of paradigm within it. The aim of the study is to find out how teachers talk of curriculum and curriculum development. Much effort is to be given to the interpretation of words and utterances during the development process. The research questions specify the aim of explaining what meanings are constructed and how they are understood in curriculum development as part of the interaction process.

The research questions were:
- What meanings do teachers give to curriculum development during the process?
- How are their statements and conceptions interpreted?

The research method was discourse analysis. The context of the study was the department of engineering in Oulu university of applied sciences, the participants being 15 teachers working as program leaders. The material consists of six group discussions proceeding as a pedagogical process in 2009-2011. The meetings were recorded and transcribed.

The results of the study consist of interpretation repertoires. The conception 'repertoire' emerges from theory of discourse analysis and repertoires can be defined as situationally constructed varying ways to talk about curriculum development and curriculum.

Six interpretative repertoires for curriculum development practises were formed from the material. They were named as 'coercion, duty, benefit, threat for the autonomy, initiative for reflection and toughening pedagogic leadership' -repertoires. These repertoires are linked to themes of the teachers' pedagogical practises and the identity construction. The most dominant repertoire was coercion repertoire.
Seven interpretative repertoires were formed about the *curriculum* itself. They are repertoires of 'formal learning, substance-centeredness, personal learning, knowledge-based, course-centeredness, student as an object and inconsistent relationship with the working life'

The best basis for curriculum development seems to be the teachers' equal participation in curriculum development. Reflective and inquiring orientation to work should be strengthened. The need for developing the curriculum should emerge from the critical reflection of one's own pedagogical practices. The concept competence-based should be clarified and constructed on the basis of dynamic interpretation. The model of European qualification framework, EQF which integrates knowledge, skills and competences is revealed to be incompatible with the formal curriculum model. Adopting EQF would help understand the relationship between theory and practice as an interactive praxis-based realationship, which should be the foundation of the pedagogy in universities of applied sciences and in higher education in general.

Stressing professional growth as a starting point for curriculum development would give a good basis for understanding learning as personal and ubiquitous and be developed in collaborative ways. Pedagogic identity attaches teachers to discussions concerning students and their learning wider than just learning subjects. Students should also be seen as co-participants in planning their learning.

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RDC: Technical and Vocational Teacher Education (TVTE)
Subtheme: Innovation

Formative Instructional Practices / innovation / student engagement

Abstract
In June 2015 the Galway-Mayo Institute of Technology (GMIT), Galway, Ireland, established an educational partnership with the non-profit educational provider, Battelleforkids (BFK), Ohio, U.S, in the context of piloting an educational innovation in Initial Teacher Education (ITE) in Ireland. Among its educational strategies, BFK promotes Formative Instructional Practices (FIP), by means of a suite of online educational resources, including certified modules. One member of the GMIT ITE lecturing staff, who availed of BFK training both in Ireland and in Ohio, modelled and implemented BFK strategies in the academic year 2015-2016 with a cohort of final year student teachers (n=15) who subsequently implemented BFK strategies on School Placement, January - February 2016, in technical subjects. The pilot was rooted in multiple educational theories that promote discovery methods, student-centred learning, and learner self-actualisation.

The primary aims of the pilot study were to establish whether FIP strategies enhanced innovation and creativity in teaching, resulted in a more hope-filled learning experience for second level pupils, and enhanced student learning. The methodological framework was a qualitative action-research study and the research methods included: student online forum teacher critical reflections (n=15), student engagement surveys - baseline and final (n=30), one representative focus group (n=6), and three one-on-one interviews with randomly selected student teachers (n=3). A manual letter-based coding system was used to facilitate a thematic analysis; dominant themes were identified that clustered around the core research aims. Positively, research findings indicated evidence of the implementation of selected FIP strategies by all research participants. The majority of students perceived that FIP enhanced the quality of teaching and learning in the classroom, increased hope of success, and impacted positively on student engagement and attainment. There was increased evidence of innovative practices in the classroom, in comparison to the student teachers' previous school placement, and greater confidence in teaching creatively.

Negatively, the time management demands of embedding BFK training into the already established academic curriculum was a significant challenge; out of a possible seven BFK modules, only one was successfully completed by the student cohort (n=15) prior to the end of school placement. Also, student teachers sometimes encountered a resistance in school settings to innovative practices, preferring a more traditional and exams focused methodology. Finally, the management of BFK pilot research by the module leader, across a suite of schools proved challenging in terms of providing student support.
This research is aligned with the conference theme of innovation. A notable finding was that, while student teachers are trained in creative student-centred methodologies, school placement may not always act to encourage such innovation. Given this finding, we would hope to explore interactively at the ‘interactive paper presentation’, the cultural resistance that can be met in established placement schools to non-traditional and innovative teaching strategies. An attempt will be made, on the proviso of consent, to capture different European (and other) cultural stances towards innovative practices in the classroom, live, on the day of the presentation, using KAHOOT and/or Video format, as initial data for a follow-on study.

Given that the pilot was exclusive to technical subjects, the RCD most applicable is the Technical and Vocational Teacher Education (TVTE) RCD.
174 – A literature review of innovative digitization to be used for schools of tomorrow. From Technical vocational teacher Education to classroom and workshop

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RDC: Technical and Vocational Teacher Education (TVTE)
Subtheme: Innovation

Digitization / literature review / TVTE

Abstract
It is a perpetual fight going on to conquer the digital educational market, not least among the major players such as Apple, Microsoft and Google, in addition to suppliers of various products, such as Interactive boards like Smart Board and Software like Adobe. We also have a development of how and what is possible to make out in the digital world. Horizon report from New Media Consortium (nmc.org) trying to create a future vision of how they envisage future developments.

In this paper, the focus is on the digital solutions that can be used in school of tomorrow for both the Technical Vocational Teacher Education (TVTE) and the Technical Vocational Education and Training (TVET). The study is done as a literature review(Hart, 1998).

What are digital solutions for tomorrow’s TVTE and TVTE?
The criteria for literature (search) are finding relevant literature that addresses the digital solutions we can us in the school of tomorrow.

A prerequisite for the solutions is sought after is that they are possible to implement, that they to a certain extent is tested and that they fit into TVTE to such an extent that it becomes useful in the practice of the teaching profession. Most students are already working as teachers and will be able to apply it directly.

I am currently responsible for a flexible education (online) for TVTE in technological disciplines. The students in this is study are to become teacher for the education program (1) Building & Construction (BA), (2) Electricity & Electronics (EF), (3) Technical & Industrial production (TIP), (4) Service & Communication (SS). TVTE_TP is a generic term for the four programs. The program consists of professional subjects, vocational subjects and practice. To get into the TVTE_TP program it is mandatory to have a journeyman certificate and at least 4 years experience in the profession.

By finding the good digital solutions through a literature study and then try them out in practice at a later stage the TVTE program will be able to contribute to a more digital literacy among teachers. This in turn will contribute to a richer digital school day for the pupils.

According to the ICT centre (national centre for ICT in Norway) is a major challenge that the teachers do not hold and add up to a digital school day. Which leads to a gap in the competences of the future. The session will be interactive by some of the tools for interaction will be tried out, such as Kahoot.(Kahoot.it)
The goals of creativity cultivation in primary and secondary education

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RDC: Professional Development of Teachers
Subtheme: Innovation

Creativity / educational goals / teacher education

Abstract

Background

In the Netherlands, the educational system is urged to cultivate students' creativity throughout the curriculum (e.g. Voogd & Pareja Roblin, 2010). There is ample evidence that it is indeed possible to develop creativity (e.g. Sternberg, 2006). Nevertheless, real changes fall behind so far (SLO, 2015). Dutch primary and secondary teachers are willing, but feel insufficiently equipped and supported to make a solid start. We depart from the assumption that teachers' current reluctance signals their professional realism. Teachers need to know more about the conditions, indications and possible outcomes of creative processes, and, first of all, the goals of creativity cultivation in general. This is particularly so because the implementation of creativity in a system requires the rethinking and reconstruction of all its components (Nickerson, 2010; Sternberg, 2015). Consequently, the same holds for teacher education. In this round table we present and discuss our position on the following question:

Central question

What should be the main goals of creativity cultivation in primary and secondary education?

Statement

The goals of cultivating students' creativity are the development of their self efficacy, positive attitude and self knowledge regarding their creative functioning within and across different domains.

Arguments

The arguments for this statement have their theoretical and partly empirical basis in three fundamental features of creativity. These relate to:

1. The affluence of the full creative process

Creative functioning in schools implies being stimulated, as a learner, to develop the broad array of human qualities inherent to full creative functioning; cognitive, social, practical and personal. This is an opportunity: learners can develop as whole human beings. And this is only likely to occur when teachers focus explicitly and non-judgmentally, with their learners, on what it means to be creative and on their learners' manifested creative qualities and challenges in particular.

2. The vulnerability of creative functioning in an educational environment

Research indicates that motivational orientations determine to a large extent which qualities learners really demonstrate in schools. This is particularly true for creative functioning. Schools may easily reinforce the vulnerability of creative functioning, for example through external evaluation and limited space for imagination. The cultivation of creativity should therefore be an explicit enterprise with learners, primarily directed at the development of students' self efficacy, positive attitude and self knowledge regarding their creative functioning.
3 The partly domain specific nature of creativity

Creativity requires partly domain specific knowledge, skills, attitudes and habits. Creative functioning is also an intense and complex process, requiring much mental energy. Mental energy is largely generated by the interest and drives of learners in relation to the learning content. The majority of learners is not equally interested in all subjects across the broad curriculum. It follows that learners tend to be more creative in one domain over another. The development of learners’ self knowledge and self efficacy regarding their domain specific creative talents are therefore important goals.

Questions
Do you agree with the central goals presented?
Do the three arguments make sense to you in relation to the central statement?
What would be the consequences of our statement for teachers, learners, teacher education programs, teacher educators and student teachers?

Relevance
This study and joint discussion relates to the current European challenge to create space and support for learners to (re)discover and cultivate their creativity. Participants discuss a perspective on the goals and features of creativity cultivation, which may enrich their own professional (re)orientation. A position paper will be provided. All interested participants are welcome!

References
Surviving with Joyousness: A Case Study of Pre-service English Language Teachers' Socialization to In-post Teaching Practicum in China

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RDC: Professional Development of Teachers
Subtheme: School-based teacher education

In-post teaching practicum / socialization / practical knowledge

Abstract
Teaching practicum (TP) lies at the heart of pre-service teachers' professional training and learning in initial teacher education (Yuan & Lee, 2014) and offers pre-service teachers with opportunities to socialize and enculturate to the field (El Kadri & Roth, 2015). By observation, teaching and reflection during the practicum, pre-service teachers are expected to reconcile the gap between theory and practice and develop practical knowledge which is 'directly related to action, readily accessible and applicable to coping with real-life situations' (Calderhead, 1988, p.54). Although TP is regarded as an integral part in initial teacher education program, it is also one of the most challenging and frustrating experiences for pre-service teachers. In China, the traditional mode of TP has been criticized for its short time frame and lack of opportunities for pre-service teachers to conduct real teaching (Yan & He, 2010), which may hinder pre-service teachers' socialization of 'becoming a participating member of the society of teachers' (Uzum, 2015, p.3) and undermine the effectiveness of TP (Zou, 2009). To address the problems of the traditional mode of TP and in the interest of a more even distribution of education resources by the Chinese government, more and more teacher education institutions in the rural regions of China have begun to adopt in-post teaching practicum (ITP), which signifies close and two-way collaboration between teacher education institutions and rural schools. That is, pre-service teachers from the teacher education institutions will be assigned to the rural schools for one semester (about twenty weeks and hence a longer time frame) and take the posts of some regular teachers in the schools (Lu, 2007), hence real teaching can be conducted. As exchange, those regular teachers whose posts have been taken will go to the teacher education institution for full-time in-service training.

To explore the effectiveness of this new mode of TP, the present study investigated five pre-service teachers' socialization experiences. The research questions of the present study are: 1) what challenges have pre-service teachers encountered in their socialization to ITP and how do they reconcile them? 2) What practical knowledge have they developed during ITP? The research data will be collected via semi-structured interviews and pre-service teachers' reflection journals and the data collection is expected to finish at the end of March, 2016. Data analysis of the present study will be supported by grounded theory to seek out the latent themes through the process of constant comparison of the gathered data. Tentative results have indicated that ITP increased pre-service teachers' motivation in taking their practicum. Upon entering their practicum context in rural schools, pre-service teachers were confronted with reality shocks such as less-developed teaching equipment, shortage of English teachers as well as students' relatively low motivation and weak foundation in English learning, and thus they developed a strong knowledge of the context. With deeper understanding of the teaching and learning context in rural schools, pre-service teachers develop their pedagogical content knowledge by reflection and consulting more experienced teachers. Interestingly, some pre-service teachers are looked up as authorities by their colleagues in English teaching. By engaging in communities of practice, they shared knowledge such as English
learning theories and teaching strategies with other teachers and also learned from them some practical skills in classroom management, especially in dealing with naughty students. The present study can demonstrate the effectiveness of ITP in establishing a smooth socialization process and facilitating pre-service teachers' practical knowledge development, with useful implications for similar contexts.

References


Understanding primary English teachers' professional experience in China

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RDC: Professional Development of Teachers
Subtheme: School-based teacher education

Abstract
Teachers' professional experience has been acknowledged as a key factor that influences their beliefs and perceptions about teaching (Kamhi-Stein, 2013). Specifically the challenges that teachers experience and how they cope with the challenges can impact on the ways in which they position themselves as professionals, and this positioning in turn has a pivotal role to play in shaping their pedagogical practices (Kamhi-Stein, 2013). However, it is not easy to investigate teachers' professional experiences as their 'career journeys are not adequately linear, predictable or identical--are often, in fact, unexplainable using the tools at our disposal' (Huberman, 1993, p. 264). In the field of TEFL (Teaching English as a Foreign Language), English teachers' professional practice is considered particularly complicated and challenging due to 'changing educational conditions, especially language policy shifts and curriculum reform in many contexts' (Trent et al., 2014, p. 1). In 2001 the Chinese Ministry of Education promulgated the Guidelines on Actively Promoting the Establishment of English Course in Primary Schools, prescribing that English should be taught gradually in all the schools of cities and counties from the fall semester of 2001, and in all the schools of towns and villages from the fall semester of 2002 in grade three (MoE, 2001). The promulgation of the Guidelines has resulted in a great need of primary English teachers, totaling more than 200,000 in cities and many more in towns and villages (Wu, 2011). Although great efforts have been made to solve this problem in the past fifteen years, the quantity and quality of primary English teachers still present an urgent problem for the Ministry of Education. The problem of teacher shortage is further exacerbated by the continuous teaching reforms imposed by the educational authorities with an aim of improving primary English teachers' pedagogical skills and teaching effectiveness (Gao et al., 2010). As a result, primary English teachers in China work under enormous pressure, having to cope with stringent requirements and formidable challenges.

Against this backdrop, this study employs a narrative approach to investigate the professional experiences of six primary English teachers' in China, focusing on the tensions between the pivotal roles they play and the stern reality of their teaching contexts. Specifically, this study aims to answer the following two questions:
- What challenges do Chinese primary English teachers face as they enact their roles in their work context?
- How do they cope with the challenges?

To collect the data, both narrative frames and interviews are adopted. Narrative frames enable research participants to think reflectively about their own professional experiences based on the 'specially designed narrative structure' (Barkhuizen & Wette, 2008, p. 381), while interviews are used as a complementary tool to avoid the 'depersonalization of the participants' stories' (Barkhuizen, 2014, p. 14).
The data will be coded in terms of the key concepts in narrative frames to identify the emerging themes. Then the categorization of the different themes will be conducted for different cases, and the comparison of different cases will lead to the final interpretation through cross-case analysis.

This study will not only add to our limited understanding of how primary English teachers in China deal with the challenges arising from their work, but also offer useful implications for primary English teachers' professional development in other similar contexts. Tentative results suggest that primary English teachers need constant support from colleagues, school leaders and policy makers. Also, primary English teachers themselves should act as reflective practitioners and engage in ongoing reflections on their professional development.

References
Exploring the emerging role of teacher educators: supporter of student teachers' professional identity dialogues

Martine van Rijswijk, Utrecht University, the Netherlands, Kara Vloet, Fontys University of Applied Sciences, the Netherlands, Anna van der Want, Leiden University, the Netherlands

RDC: Professional Development of Teachers
Subtheme: Professional roles of teacher educators

Dialogues / professional identity / reflective approaches

Abstract
Discussiant: Prof. dr. Paulien Meijer, Radboud University Nijmegen, the Netherlands

Teacher educators need to engage with and be supportive of their student teachers' professional identity development (Beauchamp & Thomas, 2009). However, instruments or tools which teacher educators can use to support the development of student teachers' professional identity are scarce or developed ad hoc. In this symposium, we set out to explore what teacher educators can do to support professional identity development and hope to add to the body of knowledge on the professional role of teacher educators with respect to this emerging theme in the field of teacher education (Murray, Swennen & Shagrir, 2009). The focus of the symposium is on supervision dialogues as in such meetings teacher educators can contribute to creating a dialogue that assists student teachers in telling the story of who they are as teachers, and thus help them shape their professional identity (Akkerman & Meijer, 2011).

In three presentations, three different approaches/instruments will be presented based on empirical research and our own teaching practice. Similar in all presentations is the attention paid to the role of teacher educators in reflection and the support of student teachers during times of change and distress. The audience will be invited to try the tools during the session and join us in reflecting on the merits and downsides of the approaches. All in all, with this symposium we hope to add to a better understanding of what teacher educators can actually do, and which instruments they can use, to support the development of the professional identity of student teachers.

References

Presentation 1: Addressing sensed dis/continuity in professional identity dialogues
Martine van Rijswijk, Sanne Akkerman, Jan van Tartwijk, Utrecht University, the Netherlands

Learning to become a teacher is often described as challenging and strenuous (e.g. Beauchamp & Thomas, 2009), amongst other things because it includes dealing with tensions that occur during the process of professional identification (Pillen, Beijaard & den Brok, 2013). Such tensions, competing demands within the profession, can evoke challenges to the professional identity of student teachers.
teachers. Accordingly, a process of sensemaking is triggered, aimed at reconstructing a sense of continuity: coherence in the understanding of one’s self over time (Akkerman & Meijer, 2011). However, not all student teachers come across, and suffer from, challenging experiences equally. First of all, student teachers differ upon entering teacher education in terms of individual perceptions of the past and expectations of the future (Van Rijswijk, Akkerman, Schaap & van Tartwijk, under review). These perceptions and expectations contribute to a unique sense of dis/continuity towards becoming a teacher: some student teachers are confident that becoming a teacher implies continuing the developmental trajectory entered already before actually starting teacher education while others feel that significant, personal change is needed in order to become a teacher. Consequently, the development of a student teachers' professional identity during teacher education is idiosyncratic. Research currently undertaken shows how personal themes strongly influence changes in sensed dis/continuity and contribute to readjusting one’s self-understanding as a teacher (Van Rijswijk, Akkerman & van Tartwijk, in progress).

Significant others, like teacher educators, can strongly influence the quality of how student teachers handle new situations and challenging circumstances as they develop as a teacher. However, in teacher education literature there is debate about what should and could be the role of teacher educators concerning the development of teacher identity (Rodgers & Scott, 2008). The present study focuses on the dialogues between student teachers and teacher educators. The research questions are: how is sensed dis/continuity addressed in supervision dialogues? and (how) do supervision dialogues contribute to changes in sensed dis/continuity?

To answer these questions 18 students of a post-graduate, one-year teacher education program of a Dutch research university were selected after consulting their teacher educators. Six student teachers were qualified as open and willing to discuss their development, six student teachers were qualified as introvert and six student teachers were qualified as “average”. Thirty-six audio-taped supervision dialogues, including two dialogues of each student teacher, were analyzed using a dialogical perspective (Hermans, 2002). Analyses shows how personal themes of student teachers add to so-called “dialogical loops”, i.e. joined dialogical efforts of both the student teacher and the teacher educator to gain a better understanding of the self-attributes that are considered vocationally relevant by the student teacher. The dialogical loops were found to vary in terms of regulation and regarding their impact on sensed dis/continuity. During the presentation the participants will be invited to analyze one of the supervision dialogues in order to get a sense of the nature of dialogical loops and to explore consequences for supervision in teacher education.

References


Van Rijswijk, Akkerman, Schaap & van Tartwijk (under review). Prospective teachers making sense of their development: perceptions and expectations of being a teacher.
Presentation 2: Teachers’ professional identity development as dialogical process
Kara Vloet, Fontys University of Applied Sciences, the Netherlands, Gaby Jacobs, Fontys University of Applied Sciences/University of Humanistic Studies, the Netherlands, Wiel Veugelers, University of Humanistic Studies, the Netherlands

Teachers are the key to contribute to an inclusive society by doing justice to diversity in education. Developing students’ talents to become critical democratic citizens (Veugelers, 2007), requires ‘diversity competence’ to advocate the interests of vulnerable students, besides critical awareness of inclusionary and exclusionary practices in education (Vloet, Jacobs & Veugelers, 2013). From this perspective teaching and educating is a moral-political endeavour, where teachers intervene in the careers and lives of students (Kelchtermans, 2009). This affects Teachers’ Professional Identity (TPI). This study aims to provide more insight in TPI in the context of a Master-course Special Educational Needs and career development of students, by answering the following questions:
1. What is the Teachers’ Professional Identity and how is it composed? 2. How do teachers develop their professional identity as a story and in what way is this it manifested?

Based at Hermans and Hermans-Jansens (1995) Valuation Theory and Dialogical Self Theory (Hermans & Hermans-Konopka, 2010), a narrative method was designed to explore teachers’ motivation, task-concept and self-image as components of their identity. Twenty teachers explored their meaningful experiences referring to the past, present and future in three interviews based on Hermans’ Self Confrontation Method (SCM): during and after their Master-course and two years afterwards. Content analysis showed how these teachers are motivated to contribute to students’ social-emotional and career development, resulting in teachers’ feelings of self-esteem. However, they feel ambivalent in new roles as a coach-expert and change-agent in their school. A narrative analysis revealed three main themes in different teacher roles. As a student-coach: between care and development, in their professional practice: between agency and acknowledgement and in their career: between life-theme and their position in society. Life-themes often derive from teachers’ social-class backgrounds or gender socialisation.

To conclude, teachers develop their professional identity in a narrative-dialogical way. In their dialogical self, different professional I-positions as a student-coach, a colleague, a counselling-expert, a change-agent in school have to be balanced, as well as private I-positions as being a partner, a mother or a daughter. Teachers are positioned by their contexts but also position themselves in an active way. In teacher education the results of this study are useful, to become aware of ones diversity of I-positions in identity as a ‘dialogical self’, accompanied by positive, negative or ambivalent emotions. Student-teachers and educators could use the developed instrument to reveal a life-theme in their professional and personal story (Vloet & Van Swet, 2010).

Planning to make session interactive
By self-confrontation method participants can explore and dialogue their roles in professional identity.

References
Antwerpen/Apeldoorn: Garant.

Presentation 3: Supporting teachers’ interpersonal role identity
Anna van der Want, Leiden University, the Netherlands, Perry den Brok, Douwe Beijaard, Eindhoven University of Technology, the Netherlands, Mieke Brekelmans, Utrecht University, the Netherlands

Positive relationships with students are central to teachers’ self-efficacy, well-being and ability to teach (Day, et al., 2006). These interpersonal relationships play a major role in teachers’ identity (cf. Day, et al., 2006). In line with Burke and Stets (2009) this role can be called the teachers’ interpersonal role identity (TIRI). Despite the acknowledged importance of professional identity on the one hand and teacher-student relationships on the other, empirical research about TIRI, is scarce. This study aims to gain insight in TIRI and presents a tool for teacher educators to support (student) teachers’ development of their interpersonal role identity. This tool, the Match Maker Analysis will be elaborated upon during the presentation.

TIRI focuses on the meaning making of teachers’ interpersonal relationship with students. TIRI consists of two elements: 1) appraisals of specific interpersonal situations; the meanings individual teachers give to specific interpersonal situations) and 2) their interpersonal identity standard; their frame of reference.

If the interpersonal identity standard is confirmed during the appraisal of a specific interpersonal situation, this is called a match. A mismatch occurs when teachers’ appraisals of specific interpersonal situations do not match with their interpersonal identity standards. In case of a mismatch, “(...) people become upset or distressed in varying degrees” and thus will try to change this mismatch of their appraisals and identity standard into a matching couple (Burke & Stets, 2009, p. 208).

This study aims to answer the following question: To what extent do teachers experience a match between their appraisal of specific interpersonal classroom situations and their interpersonal identity standards?

Semi-structured and video-stimulated interviews of 29 secondary school teachers were used to collect data about teachers’ appraisals of specific interpersonal situations and their interpersonal identity standards.

The interviews were transcribed and coded using the two dimensions of the Teacher Interpersonal Circle (Wubbels, Brekelmans, van Tartwijk, & den Brok, 2006): (1) the control dimension representing the degree of control/influence the teachers has when interacting with students, and (2) the affiliation dimension representing the degree of cooperation between the teacher and the students. For all respondents, the codes of the appraisals of specific interpersonal situations were compared with the codes of the interpersonal identity standard to see whether there was a match or a mismatch.
Results showed that for 13 of the 29 teachers, their identity standard matched with their appraisals. In most cases, however, this match was only partial (10 teachers) and sometimes not at all (six teachers).

To conclude, only some teachers were able to create a match. The outcomes of this study suggest that during teacher education specific attention should be paid to teachers’ interpersonal role identity in order to help student teachers to develop their interpersonal role identity towards a match and to increase their wellbeing.

The concept of TIRI can be helpful for teacher educators since it provided a ‘language’ to discuss one of the crucial role identities of the teacher: the interpersonal role. The Match Maker Analysis might be seen as a tool that teacher educators and coaches in schools can use for supporting (student) teachers to develop their TIRI.

### Planning to make session interactive
During the session, the audience gets the opportunity to practice with the Match Maker Analysis on a presented case/story of a teacher.

### References


Classroom Teacher Candidates' Evaluations on Constructivism

Yeliz Temli Durmus, Usak University, Turkey

RDC: Curricula in Teacher Education
Subtheme: Professional roles of teacher educators

Constructivism / teacher candidates / teacher training

Abstract
Constructivism is a theory of learning not a theory of teaching. It is a theory about how people learn or make meanings and how knowledge is constructed. Its central claim is that human knowledge is acquired through a process of active construction (Brooks & Brooks, 1999). Learners construct their own meanings/ knowledge and create their own understandings by experiences (Resnick, 1987). Learning is an independently-performed activity strongly embedded in situations (Terhart, 2003). Constructivism is underlined as main approach/philosophy in Turkey and teachers are expected to internalize the approach. In that point the researcher would like to asked for teacher candidates opinions and answers on these questions: Are classroom teacher candidates ready to implement constructivism? Did they really experienced the approach during their pre-service education? What does constructivism mean for classroom teacher candidates? In this qualitative study, 52 senior classroom teacher candidates volunteraly filled out the surveys in Usak University, Faculty of Education but 47 of them included in the study. In order to make triangulation, semi-structured interview questions were written and expert opinions were taken from 2 educators whose specialized areas are Curriculum and Instruction. Participant approvals are also taken from participants by using focus group interviews. Interviews were realized with 3 assistant professors. The results showed that pre-service teacher education is limited in terms of constructivist implementations. The reasons behind that national exams exist. So as to be a teacher, all teacher candidates take an national exam and appointment rates very low for classroom teachers. That is why, getting theoritical information is perceived as more important than experiencing or implementing constructivism. The participants underlined that when they were freshmen and sophomores, the professors did not implement constructivism during the classes and they are very excited and anxious now because of national exam. 'In what courses did you implement constructivism’ question was also asked. Teacher candidates misconception was very clear: Teacher candidates represent the subject based on the instructional plan, the learners would be active, so constructivism would be implemented. The instructors assigned subjects to groups formed 3-4 teacher candidates and according to teacher candidates the instructors made them active and use constructivism. Themes and codings were constituted and another expert' opinion on themes and codings will be taken. After taking feedbacks of expert in Curriculum Field, tables including codings and themes will be presented.

References
Looking back at teacher education: the view of novice teachers

Suzan Klaver, Rikky Dekkers, The Dutch Inspection of Education, the Netherlands

RDC: Curricula in Teacher Education
Subtheme: Professional roles of teacher educators

Differentiation skills / views of graduates

Abstract

Recently, the Inspectorate of Education examined how novice teachers assess the quality of their teacher training. Successively, we did research among graduates of teacher training colleges for primary school teachers, second level teachers[1] and first level[2] teachers. The results of the investigation have already been or will soon be published in the series of reports Beginnende leraren kijken terug; onderzoek onder afgestudeerden. Part 1, about teacher training colleges for primary education, was published in March 2015. Part 2 is about training for second level teaching qualification and was published in November 2015 (see: http://www.onderwijsinspectie.nl/publicaties/2015/10/beginnende-leraren-kiijken-terug-deel-2-tweedegraads-lerarenopleiding.html - in Dutch). Part 3, on training for first level teaching qualification at colleges and universities, will be published in the summer of 2016. In these reports we give a national overview.

The research question is:

How do graduates from teacher training colleges look back on their training, particularly with regard to their preparation for teaching practice (pedagogical and didactical skills) and the level of subject knowledge?

Starting point for this research are the learning outcomes for teachers as described in Dutch law on the teaching profession (Wet Beroepen in het Onderwijs). We payed attention to subject content, teaching methodology and general pedagogical skills. In addition we raised questions about the organization of the training and the perceived level of the teacher training. By ‘graduates’ we mean: novice teachers who have graduated no more than three years ago. If possible we use additional sources of information about the opinions of other stakeholders, such as students, supervisors and inspectors of education.

In general, we see that most graduates are satisfied with the level of subject knowledge, but they feel less well prepared for (complex) pedagogical and didactical skills. This is especially the case for differentiation skills, a subject we find essential because teachers have to deal with fast or slow learners, or pupils with special needs. In all three groups - primary school teachers, second level teachers and first level teachers - we find that graduates feel not or not sufficiently prepared on these differentiation skills. This involves matters such as: the systematic tracking and analysis of pupils learning outcomes, and the ability to differentiate and provide customized care to pupils. Monitoring outcomes and adjusting the material to differences between pupils score low. Many graduates are dissatisfied with the theoretical knowledge and skills they have acquired on these issues.

[1] The holder of this diploma has qualified teacher status in the Netherlands for teaching the named subjects in preparatory secondary vocational education (VMBO) and in the first three years of senior general secondary education (HAVO) or pre-university education (VWO).

[2] The holder of this diploma has qualified teacher status in the Netherlands for teaching the named subjects in all years and all types of secondary education.
References
137 – Teacher Candidates as Read-Aloud Tutors: Educating the Best Literacy Teachers

Jodi Nickel, Scott Hughes, Mount Royal University, Canada

RDC: Curricula in Teacher Education
Subtheme: School-based teacher education

Literacy / teacher education / tutoring

Abstract
It is critical that teacher candidates (TCs) preparing to teach elementary age students have a strong understanding of early literacy development and skilful pedagogy in literacy instruction. To foster such knowledge and skill in one Canadian Bachelor of Elementary Education program, TCs enrolled in a course called Language Development and Literacy spent a portion of their weekly school field experience facilitating one of two individualized reading programs with children aged five to eight. Participants in the first program engaged in weekly interactive read-alouds with 2-3 children; participants in the second, more intensive program, engaged in one-on-one tutoring based upon Reading Recovery principles (Clay, 1993).

The purpose of this interactive paper presentation is to share findings from a qualitative study exploring TCs experiences as reading tutors in developing knowledge and skills as literacy teachers. The follow questions guided this study:
- What did TCs learn about responsive teaching through weekly participation in a read-aloud tutoring program?
- What is the relationship between a weekly read-aloud tutoring program and TC knowledge of literacy development?
- What did TCs learn about promoting reading comprehension through weekly participation in a read-aloud tutoring program?

Research demonstrates that read-alouds can foster positive attitudes and build foundational skills necessary for independent reading (Trelease, 2013). Further, research demonstrates how tutoring helps TCs develop a greater facility with the language of read-alouds, apply course concepts to the analysis of their work with children, and learn to teach responsively to children’s unique needs (Assaf & Lopez, 2012; Pendergrast, May, Bingham & Kurumada, 2015; Timmons & Morgan, 2011). This knowledge informs the development of theory/practice connections between course and practicum to support TCs’ learning through their tutoring experience.

Of 70 course participants, 45 consented to participate in the study. Data included the TCs' weekly logbook notes, monthly reflections, and their final case study. Data were analyzed for insights and depth of knowledge using a constant comparative method with attention paid to recurring themes (Erickson, 1986; Lincoln & Guba, 1985). Three researchers collaborated in the analysis process using ATLAS.ti to establish an initial list of 67 descriptive codes. These were winnowed down to three themes: (a) responsive teaching, (b) knowledge of literacy development, and (c) reading comprehension.
First, TCs described a variety of ways they learned to be responsive to their tutees' needs. This included adjusting their instruction to meet each child's attention, recognizing the need to foster confidence in their tutee, and strategies for addressing and monitoring the progress of each child's individual learning. Second, TCs described their knowledge growth in guiding children's literacy development in terms of practical strategies, including activities to promote phonological awareness, use of picture clues to read unfamiliar words, and playing games to teach children high-frequency words. Finally, TCs described a paradigmatic shift from viewing reading as a decoding exercise to understanding reading as meaning making. This shift was predicated on TCs increased confidence in probing children’s understanding of the stories read with meaning-focused comprehension questions. Findings are being used to support the development of course work that aligns the theory and practice of literacy instruction, enhance TCs' growth as strong literacy teachers, and contribute to the scholarship of pre-service teacher education and children's literacy.

In conclusion, this presentation aims to provoke rich discussion on the role of practicum in supporting pre-service teachers on their path to becoming strong literacy teachers. The following questions will guide the discussion:

- What are the essential understandings regarding early literacy development that elementary teachers must develop?
- What are provocative prompts that can invite reflection upon school experiences and a deeper understanding of those essential literacy understandings?

References
192 – Role of experience on teacher beliefs: use of native language in foreign language classroom

Gülden Taner, Middle East Technical University, Turkey

RDC: Professional Development of Teachers
Subtheme: School-based teacher education

Language teacher education / beliefs / L1 / EFL

Abstract
Beliefs and attitudes of teachers constitute an important part of their professional identity; as their beliefs change over time through experience and learning, teachers’ identities evolve. These changes outline their route of professional development. This study aims to investigate how having an experience in teaching affects teachers’ attitudes towards native language (L1) use in English classes. Most studies conducted on teacher attitudes towards the use of L1 dealt with the issue either by reporting in-service teacher beliefs or by contrasting student opinions to those of teachers. The focus was mainly on in-service teachers; however, this study aims to investigate the attitudes of pre-service teachers towards the use of native language in classroom, and though they have very limited experience, to investigate any affect that is caused by their experiences. For this aim, this paper reports on a research project in which 78 pre-service teachers of English as a foreign language (EFL) took part in a survey, and 3 interviews with volunteers followed. 29 of these pre-service teachers had no prior teaching experience (will be referred to as inexperienced group). The remaining 49 had some experience beforehand, such as offering one-to-one private courses or helping their peers to learn English, some of them had experiences in real classrooms but they were never the only one responsible for teaching. This relatively experienced group of pre-service teachers will be referred to as the experienced group. The participants are all enrolled in a 4-year language teacher education program offered at BA level at a state university in Turkey. They had already taken methodology courses but had not yet participated in school experience or practice teaching courses (these two courses constitute the practicum component of the teacher education program). Following research questions were addressed though a detailed survey and interviews with volunteers: 1) what are the attitudes of each group towards using L1 a) in specific classroom interactions, b) while teaching at different levels of proficiency and c) specific language areas?; 2) Does having prior experience cause significant differences among groups? The hypotheses were that 1) the pre-service teachers would favor use of English-only under most circumstances, since instructors at the TE program mostly favor use of English-only in classes, and encourage students to do so and 2) having an experience would change their attitudes. The hypotheses put forward in the initial stages of the study were tested through qualitative and quantitative analyses of the data. It was seen that the pre-service teachers were generally more in favor of using English as prescribed by the theory, but they were also positive about the use of L1 especially in problem areas. For the second part of first question, it was seen that the degree to which the pre-service teachers supported L1 use in classroom changed in accordance with the levels of the students. At lower levels, they all agreed that the amount English can be used is less when compared to advanced levels. All the data analyzed under the first two research questions were also correlated with the experience variable; although the differences among the two groups were not statistically significant, experienced group was relatively more positive towards the use of L1 in classroom. Therefore, it can be concluded that experience had only a slight effect on teacher attitudes and attitudes might probably be shaped further when they became in-service teachers in real teaching contexts.
Vocational teacher's competence in inclusive learning environment

Marja Koukkari, Oulu University of Applied Sciences, Finland

RDC: Inclusion and Special Needs
Subtheme: Professional roles of teacher educators

Diversity / early intervention / special support / autonomy / diversity / life control

Abstract
Teachers throughout Europe have experienced meeting diverse students as a challenge in their work. In educational political discussions diversity is approached as a challenge connected to cognitive, linguistic, cultural, ethnic or sex questions. The greatest obstacles of inclusion are connected to the conception of and attitudes towards diversity. Vocational education in Finland is striving to create learning environments, schools, educational organizations and work life as well as the possibilities to include mixed ability students according to inclusive ideology. Carrying out those principles is supported by commitment, new pedagogical solutions, curricula, learning environments, flexible and individual learning paths as well as teachers' professional competencies. The aim is to make as many special needs students as possible study together with fellow students in an environment where all find it possible to learn and study, despite different starting points. In vocational education the number of special needs students has increased especially in general vocational institutes. Teachers are in a key position in supporting the students. Actually, all teachers should have special pedagogical preparedness, which is a remarkable challenge in teacher education. This article deals with vocational teachers' competence to meet special needs students in an inclusive learning environment.

The research questions were:
- What kind of experiences do vocational teachers have of teaching/guiding special needs students in an inclusive learning environment at secondary level?
- What kind of competences do vocational teachers think they are expected of in teaching/guiding special needs students at vocational secondary level?
- What kind of experiences do vocational teachers have of supporting special needs students in practice?

The research material consisted of semi-structured thematic interviews of seven (N=7) vocational teachers in 2015-2016. They represented five various fields of science with professional experience ranging from 5 to 28 years. The interviews were transcribed word by word. The material was analyzed by contents analysis method paying attention to similarities and differences of opinions and trying to create a global and clear picture of the phenomenon to be studied. Besides similarities and differences, efforts were made to find meanings referring to the respondents’ life worlds. Thus this research is especially aiming at the interpretation of individual experiences.

The research outcomes show that vocational teachers feel their daily activities positive in inclusive learning environments. The efforts of educational organizations are praised in their making special pedagogical solutions and various forms of support and guidance possible. The significance of a teacher's personal attitude in the progress of students' studies is also clearly observable. Although the work is challenging and requires giving up the teacher's traditional role, successful experiences are rewarding and encouraging.
The outcomes also show the necessity of special education and teachers’ professionalism. Multi-professional competence and team-teaching are required from all teachers in addition to substance competence. Meeting learning difficulties makes sometimes vocational teachers feel the need of expert views and help. The support of experienced colleagues and student care staff is a remarkable source of encouragement. The importance of a teacher’ feelings and attitudes in interaction is also stressed. Teachers feel that when a worry appears, the matters must be grabbed immediately. Flexible learning paths and students’ diversities have stressed the ability to meet individual needs and support students in addition to the substance competence demands of every teacher.
Preparing the Teachers for Inclusive Vocational Institutions: A Perspective from Finnish In-Service Teachers

Cheng-Yu Pan, Raija Pirttimaa, University of Jyväskylä, Finland, Marja-Leena Stenström, Finnish Institute for Educational Research, Finland

RDC: Inclusion and Special Needs
Subtheme: School-based teacher education

Finland / inclusive vocational education and training / initial teacher education

Abstract

Introduction
Initial teacher education (ITE) has been criticised to lag behind schools' reality (Boyle-Baise & McIntyre, 2008; Lewin & Stuart, 2003). With numerous social and cultural changes nowadays, new demands placed on teaching profession inevitably require the transformation of ITE. The competences of teachers to deal with increasing diversity of students play a vital role in providing more equal and equitable education for all (Council of the European Union, 2007). Correspondingly, an advanced ITE to prepare future teachers for a more inclusive educational environment deserves more attention from researchers, teacher educators and policy makers.

In-service teacher's school-based experiences are beneficial for ITE to strengthen the connection between teaching theory and practice (Borko & Mayfield, 1995; Mason, 2013; Sim, 2010). The special educational needs (SEN) services in Finnish inclusive vocational institutions are mainly provided by SEN teachers. In-service SEN teachers' perspectives, therefore, on their ITE programmes are valuable to improve the quality of ITE in response to the evolving challenges of student diversity. Three research questions were asked to explore how in-service teachers perceived their ITE programmes:
1. What did in-service SEN teachers find beneficial from their ITE programmes?
2. What did in-service SEN teachers find lacking in their ITE programmes?
3. What were in-service SEN teachers' suggestions for improving the ITE programmes?

Method
A qualitative research approach is adopted to gain insights into the 11 Finnish in-service teachers' perceptions on their ITE programmes. A three-stage thematic analysis (Braun & Clarke, 2006) was performed to examine the semi-structured interview data. Firstly, each excerpt was coded as beneficial, not beneficial and suggestion. After the initial coding, the data were grouped and organised into meaningful themes. Lastly, three overarching themes were identified. On the basis of this categorisation, major sub-categories emerged depicting the in-service teachers' perceptions on their ITE programmes.

Findings
The findings illustrate the in-service teachers' reflection at three levels on their ITE: theory, practicum and teacherhood. At the theory level, cognitive, affective and pedagogical domains concerning SEN teacher's expertise were covered in the ITE programme. However, given the challenges of students with SEN nowadays no longer merely about learning, the teachers in this research felt not well prepared with the corresponding knowledge for tackling students' problems other than learning itself.

At the practicum level, two issues emerged from the data. First, diverse educational institutions for the practicum helped broaden the ideas of different teaching contexts. Nevertheless, more field
observations were suggested to enhance the practical knowledge of teaching and learning. Second, quality interaction between mentors and student teachers was highly valued. It greatly benefitted the formulation of professional identity and the concept to be a lifelong learner. Yet mentorship should not be employed in the beginning of the ITE programme for the lack of preliminary understanding of teaching profession.

At the teacherhood level, all the interviewees gave credit to their ITE programmes. They considered themselves as more qualified and professional after being educated and trained. Per contra, within the limited period of time it could be challenging to acquire all the required competences for teaching in inclusive vocational institutions. ITE should be re-designed so that more studies on psychological and social/living management problems could be added in response to the contemporary challenges in schools.

**Conclusions and practical implications**

Our findings suggest that with in-service SEN teachers’ school-based experiences an up-to-date and more comprehensive teacher education can be well designed and developed corresponding to the ongoing changes and the new challenges of inclusive vocational institutions. Closer link and partnership between in-service teachers and teacher education institutions should be more encouraged and developed to fill the gap between theory and practice.

**References**


161 – Becoming Knowledgeable and Confident about Working With Second Language Learners in Mainstream Classrooms

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RDC: Primary and Pre-primary education
Subtheme: Innovation

Linguistic diversity / teacher beliefs / teacher self-efficacy

Abstract
The increase in cognitive demands and calls for students to 'speak 'academic'' (Maxwell, 2013) following the adoption of new content standards in the United States-brought renewed focus to the special needs of ELs in developing academic language. More than ever before, all teachers are now called upon to develop academic language skills specific to their content areas. Yet, teachers have repeatedly expressed feeling un- or underprepared for working with English learners (Durgunoglu & Hughes, 2010; Mergler & Tangen, 2009; Weisman & Garza, 2010).

Florida's mandate to equip both practicing teachers and pre-service teacher candidates to work effectively with English learners have been in place for over twenty years. Research points to a positive relationship between candidates' perceptions of their knowledge and skills regarding teaching English learners (Smith, 2011) and improved attitudes about diversity (Weisman & Garza, 2010). However, little is known about how teacher candidates' beliefs and self-efficacy related to working with linguistically diverse students are shaped during their teacher preparation programs. In the proposed session the presenter will share preliminary results of on-going Scholarship of Teaching and Learning study that looks at the change of beliefs and perceived preparedness to teach English learners over several semesters as the teacher candidates proceed through an Elementary Education program that has a strong focus on social justice and second language learners. Reasons for the need to modify the survey instrument and to expand the research to include qualitative data will also be discussed. Although this research is conducted with a focus on English learners in the United States, European conference participants will easily see the direct connection to their countries' needs to prepare future teachers to work effectively with immigrant and migrant students. Throughout the session participants will be invited to consider essential questions such studies may be able to answer in the context of teacher education courses that deal with cultural and linguistic diversity of the student body in public schools in their countries.

References


Pedagogical Strategies that Empower Children Play-based Learning

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RDC: Primary and Pre-primary education
Subtheme: Professional roles of teacher educators

Child / play / learning / pedagogical strategies

Abstract
Child's play-based learning and its scientific substantiation have still been relevant problems because: a) while playing a child concentrates on what s/he wants to play but not to learn, b) education curricular are oriented to abilities of children and pedagogical strategies, whereas orientation of children to the previously set learning outcomes may destroy the child's play itself (Yelland, 2011; Hatch, 2010). The presentation searches for the answer to the scientific question: what pedagogical strategies may empower children's learning through play as well as supporting their authentic play? The goal of the research is to design a theoretical model of pedagogical strategies that empower a child to learn through play and to conduct an expert evaluation of its practical relevance.

Methodological approaches. Following contemporary theories the pedagogical strategies, which focus on empowerment of play-based learning of children in such situations, where play and learning merge, were modelled. The expert evaluation of the model of pedagogical strategies that empower play-based learning was carried out. The expert evaluation of practical situations of teachers' intervention into child's play was also employed to identify what pedagogical strategies are applied by teachers, whether the use of such strategies facilitates retaining of the authenticity of child's play and creating of play-based learning situations. The data were analysed using thematic qualitative research strategy.

The following theories are relevant for theoretical modelling of strategies that encourage play-based learning of children. The theory of informal learning (Hille, Evanschitzsky, Bauer, 2013), which substantiates the learning of a child, when his/her efforts are directed towards not what s/he wants to learn but towards a different goal, e.g., to experience joy of play, pleasure of being together; moreover, a child learns a lot on his/her way. The theory of joint/shared attention (Sommer, Pramling Samuelsson, Hundeide, 2010; Vangsne, Økland, 2013) emphasises that the object of interest of a child and an adult has to be the same, that an adult has to look the same direction as a playing child, to see the same as a child and to expand child's perception, to encourage him or her to create personal meanings but not changing child's play itself. The theory of social learning (Smidt, 2009; Eun, 2010; Eggum-Wilkens, etc., 2014) which highlights the effect of synergistic learning together, common educational field and creation of common knowledge. The theory of communicative-didactic meetings of teachers and children (Pramling, Pramling Samuelsson, 2011; Littelon, Howe, 2010, etc.) focuses on educational meetings of a child and a teacher, educational dialogues, thinking together. Metacognitive and metacommunicative theories (Tatsis, Kafoussi, Skoumpourdi, 2008) that substantiate the strategies of promoting child's reflection on their learning ways and experiences. The presentation aims to introduce the model of this aforesaid pedagogical strategies.

The research results. On the basis of expert evaluation the strategy of establishing situations of informal learning complies best with the authenticity of child's play but the effect on empowering child's play-based learning is not significant; authentic child's play and learning is supported by the strategy of joint/shared attention; encouragement of child's reflection on their learning ways and...
experiences after his/her play strengthens child’s learning powers. The expert evaluation of teachers’ intervention into children’s play revealed that a number of teachers fail to create the situation that promote children’s learning during their play but they act as observers only; other teachers set specific learning outcomes and destroy authentic children’s play; there are also teachers, who apply pedagogical strategies empowering children to learn through authentic play, they each have a specific theory of play pedagogy.

Question: How to help teachers to create individual theories of play pedagogy that empower children to learn through authentic play?

References
The impact of the curricular reform on the activity of primary school teachers and the role of teacher education in the future

Ioana Gabriela Marcut, Lucian Blaga University of Sibiu, Romania

RDC: Primary and Pre-primary education
Subtheme: Professional roles of teacher educators

Curricular reform / lifelong learning / primary school teacher education

Abstract
The new reform in Romania in education enrolls the six-year old children in primary school, in the preparatory class, and the new curriculum for the primary school involves a new pedagogical vision: it is based on developing competences (instead of objectives) there are changes of contents, new textbooks, digital textbooks etc. Teachers have to change and adapt their work to all these new things and we think that this entails a lot of study and even alters theirs previous beliefs. At the same time the reform is a challenge for universities, which have to prepare the primary school teachers for lifelong learning. The basic questions of this study are: 'How difficult is it for teachers to adjust their work and to implement the new curriculum?' and 'What are the tasks of teacher education so as to produce well-prepared teachers for the future?' This study has used a mixed-method design as the procedure for collecting, analyzing, and combining both quantitative and qualitative data. To detect the personal impact of the new curriculum on the teachers we applied a questionnaire and conducted interviews. The target population of the study consisted of 29 teachers from two schools: one from the center of the city and another from a village. The findings indicated no great differences between the two schools regarding the teachers' perception of the new curriculum. They stressed the considerable amount of work necessary to study, understand and apply the new requirements, but some of them reported better results obtained with the new curriculum. To avoid this kind of problems for the teachers in the future, we have to change the teacher education policy. We consider the recommendations to reform teacher education in the context of lifelong learning useful (Dolan, 2012). Discussion: Is it possible to apply these principles to our university? Which are the difficulties and barriers and how can we overcome them? What is the experience of other universities in this domain?
Views Of Dutch Teacher Educators And Their Deans On Professional Development Activities For Research

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RDC: Professional Development of Teacher Educators
Subtheme: Professional roles of teacher educators

Practitioner research / professionalisation of teacher educators / research capabilities

Abstract
Conducting research isn’t always common practice for teacher educators (Murray, 2010, Lunenburg, Dengerink & Korthagen, 2014). This applies in particular for educators working in teacher education departments of institutes for higher vocational education as these institutes are traditionally teaching intensive (Murray, 2009). Besides, the hands-on experience with research of teacher educators is quite often from a distant past or non-existing (Willemse & Boei, 2013). Similar to the development in other countries (cf. Erixon Arreman, 2008), from 2000 onwards the Dutch government has encouraged vocational institutes for teacher education to include practice-based research in their curriculum and as part of teacher educators' work. As a result, these institutes changed their policies and started supporting teacher educators in their professional development by offering professional development activities (PDA) (Willemse & Boei, 2013). However, little is known about how these PDAs are put into teacher education practice or how these are evaluated by teacher educators.

The objective of this study was to examine on a national level (a) the present institutional policies, (b) the evaluation of the offered PDAs regarding research or supervising students' research in all Dutch teacher education institutes for primary and secondary education and (c) the views about retaining professional development support in this regard. The following questions were addressed:

How is teacher educators’ professional development on practice-based research and supervising students' research actually and in the near future supported according to the managers of the teacher education institutes?

What are the opinions, experiences and needs of individual teacher educators with regard to supporting their professional development in research or supervising students' research?

This study contributes to a better understanding how educators are supported in their professional development regarding research.

Methodology, Methods, Research Instruments or Sources Used
In this study a survey was used. Two questionnaires were developed: one addressing the management of teacher education institutes and one for members of the Dutch Association for Teacher Educators. The first questionnaire explored views of deans on institutional policies supporting professional development on research; the offered activities; and their evaluation of the activities. In the second questionnaire the experiences of teacher educators were examined regarding this support. The questionnaires were analysed using content analyses (Patton, 2015). Attention was paid to similarities and differences regarding separate PDAs. In addition inferential statistics (ANOVAs, Chi Square, T-test) were used to explore differences between educators (educational background, gender) and between institutes. Outcomes of the views of deans were compared with the answers of educators.
Results and main conclusions
A response was received from 25 managers and 269 educators filled out the survey. Concerning the actual policies managers as well as educators considered it important that PDAs were offered. Differences were found in policies with regard to who was permitted to conduct research and/or to supervise students’ research. Two types of activities are mentioned most: courses and informal peer consultation. Remarkably a significant difference occurred based on gender. Female educators take more often a course on supervising students' research where male educators preferred the informal peer consultation. With regard to retaining professional development support most educators answered they have no clear views about their further needs. When educators did have views about their needs they mentioned getting opportunities to conduct research under supervision of an experienced researcher, or continuing with peer consultation. Managers too mentioned these PDAs as desirable. In addition they expressed the wish for more cooperation on research(programs) between institutions.
We like to discuss the different professional development activities and how teacher educators can be supported in conducting research by themselves. The discussion will be in pairs; combining participants with different experiences.

References
The concept of autonomy of teacher educators in publications and policy documents in the Netherlands - and how autonomy is perceived by teacher educators

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RDC: Professional Development of Teacher Educators
Subtheme: Professional roles of teacher educators

Autonomy / teacher education / teacher educators

Abstract
The concept of autonomy for teachers and teacher educators (Ben-Peretz, 2001) has been discussed before on an international level and the decline of autonomy of teacher and teacher educators has worried researchers (Ball, 2013). Research shows that in the Netherlands, as in many other countries, the autonomy of teachers and teacher educators declined, mainly as a result of an increasing governmental interference (Swennen 2012). However, over the last years the idea of autonomy seems to receive renewed attention in the Netherlands in publications (Van den Berg, 2014) and in policy documents (see Bruining, Uytendaal & De Koning, 2014). In these documents autonomy is used, but also professional space and ownership. The concept of autonomy has changed over the years and it is now acknowledged that autonomy is not only a personal matter, but also, and more so, a matter of collaboration and working as a team (Hargreaves, 1994).

In our paper we present the results of a study in which we answer the questions: 1. how is the concept of autonomy represented in publications and policy documents during the last ten years? What words are used to indicate autonomy and what meaning is given to these words? Do teacher educators experience an increase of autonomy, for example: ‘to which extend do teacher educators have autonomy to develop the curriculum for teacher education’, 3. In what way does this renewed attention for autonomy impact the work of teacher educators?

To answer this question we analysed relevant academic and professional publications about teacher education and teacher educators and all policy documents of the last ten years of the Dutch Ministry of Education, Council of Education, Associations of Universities of Applied Sciences et cetera). In our presentation we describe the changing ideas in teacher education in the Netherlands during the last ten years with a focus on teacher education in Universities of Applied Sciences and problematize the complex situation in the Netherlands where the government strives to autonomy of all educators while at the same time supports large project in which the contents of the curriculum for teacher education and tests in teacher education are prescribed.

After our presentation we invite the audience to express their views on tow subjects. In the first place we like to discuss how the concept of autonomy is discussed in other countries than the Netherlands. Secondly, we would like to discuss if the teacher educators who are present experience autonomy - and an increase in autonomy - in their context and if so, how this increase in autonomy impacts their work. We hope to use the outcomes of this discussion to start answering our second and third research questions.
References
Is 'prior-Teaching Experience at school (Gemba-Keiken in Japanese)' necessary and sufficient to work as a university-based teacher educator? From a qualitative study on how university-based teacher educators in Japan confront with 'Gemba-Keiken'

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RDC: Professional Development of Teacher Educators
Subtheme: Professional roles of teacher educators

Japan / prior teaching experience / university-based teacher educators

Abstract
This study aims at re-examining a role of 'prior teaching experience at school' to become a teacher educator, by inquiring how 'prior teaching experience at school (Gemba-Keiken in Japanese)' affects university-based teacher educators' expertise on offering classes at universities. As it is well known, many of countries in the world, 'prior-teaching experience' is regarded naturally to be one of the necessary requirement for those aspire to be teacher educators. Contrary to the world's tendency, in Japan, due to its historical background, university - based teacher educators have been mainly tenure-academic staff who have very little teaching experience.

This tradition, however, faces a critical change. In 2006, it determined to establish professional schools of education, and that 40% of its faculty should be persons who have more than 20 years of teaching-experience at schools including administration. This implies a critique toward raison d'etre of conventional research-based teacher educators until now. Moreover, in the near future it can be predicted that reform of PRESET program, i.e. re-balancing between theory and practice (practicum) would occur more drastically than ever before.

This critique raises a question, and this is what this study intends to inquire: 'To what extent is 'prior teaching experience' necessary for in-service university-based teacher educators?' In other words, 'Should 'prior teaching experience' be necessary to become university-based teacher educators?' These questions basically are based on the Japanese context, however, it would be a good opportunity for research community about teacher educators to reflect on how we integrate theory and practice in teacher education. If, even university-based teacher educators find it difficult, how do they instruct future-teachers on forming a bridge between what they lean at universities and what they do at classrooms?

To answer the questions mentioned above, a semi-constructed interview was applied to four Japanese university-based teacher educators; two of them had worked as administrators in prefecture and municipality as well as experienced school teachers and directors before joining a faculty, and two of them do not have prior teaching experience at school before obtaining a position in a faculty. The interviewed data was processed in transcription and analyzed by using Grounded Theory Approach.
The results are summarized as follows: First, 'prior teaching-experience (i.e. Gemba-keiken)' has double-bladed aspect. Teacher educators are expected to interpret and re-organize one's own teaching experience into a general knowledge, which enrich PRESET classes with practical examples. If one succeeds it, Gemba-keiken functions positively. But the study found that this is a very difficult task for teacher educators who has not received academic training where a master degree is not sufficient.

Therefore, secondly, some university-based teacher educators having very rich teaching experience at schools, actually are wondering about how they organize and utilize them when they teach to students in PRESET program. In this case, prior-teaching experiences decrease focuses and awareness of what teacher educators should advise future-teacher students. These results remind us of that an experience has a characteristic that is justified by context. Japanese empirically consider that freshness of an experience keeps for five years or less, so that prior teaching experience alone cannot be part of teaching contents in teacher education. Prior teaching experience for teacher educators, therefore, are the objects that should be decontextualized by themselves, in order to scrutinize and squeeze essence of 'teach how and what to teach', where theoretical frameworks are required.
9 – Professional development of teacher educators: Frictions between current and optimal practices

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RDC: Professional Development of Teacher Educators
Subtheme: Professional roles of teacher educators

Career stages / professional development / professional roles

Abstract
An investigation of the professional development of Flemish teacher educators was conducted in 2014. This study was commissioned by the Professional Association of Teacher Educators Flanders (VELOV) and supported by the Flemish government. The purpose of the study was to examine whether the professional development practice of teacher educators in Flanders corresponds to their professional development needs. To this end, a mixed method design was used to:
Describe the current practice of professional development for teacher educators in Flanders;
Identify the professional needs of teacher educators in Flanders;
Map the designated professional methodologies over the career phases of teacher educators.

In the first part of the study, an exemplary survey was conducted in order to compile an inventory of the existing types of education initiatives for teacher educators in Flanders. An electronic survey was then conducted in order to identify the professional needs of teacher educators in Flanders. The third part of the study focused on how the professional development of teacher educators can evolve throughout their careers. This topic was examined by organising focus groups with teacher educators at two international conferences for teacher educators.

Many professional opportunities are offered in various forms in Flanders, provided by various suppliers. The diversity of activities and suppliers is certainly an advantage that meets the multitude of professional development needs of teacher educators. Nevertheless, the supply of education that specifically targeted at teacher educators is more limited than the demand. It is important for teacher educators to have sufficient autonomy to shape their own processes of professional development. It is also important to align the growth of individual teacher educators with that of the team. The development profile provides a common language and framework to this end.

Short (e.g. one-day) forms of education have proven successful. The demand for multi-day or long-term professional development programmes exceeds the supply. At the same time, even shorter professional development activities are subject to perceived budgetary and organisational barriers. More importantly, the time constraints and workload of teacher educators make it difficult for many to fulfil their professional needs.

The education needs of teacher educators differ according to career stage, and the appropriate education methods differ according to the position of the teacher educator within the professional continuum. Education is most needed in the induction phase. Expert teacher educators recommend offering broad education in the earliest career stages, with attention to all roles that teacher educators are expected to fulfil. Various forms of learning networks emerge throughout the career
development continuum. Collaboration in professional learning communities based on shared responsibility for the learning processes of students and future teachers has proven to be very effective. Various forms of supervision and peer-to-peer coaching are likely to be of great significance, given their flexibility and suitability to customisation. Flemish teacher educators devote considerable attention to professional development, and they are able to meet their needs through the broad range of existing courses and programmes offered within the educational system. Nevertheless, there is still room for improvement in the alignment of professional development with the needs and career stages of teacher educators.
10 – The positioning of school-based teacher educators as partners in initial teacher education

Elizabeth White, Claire Dickerson, University of Hertfordshire, United Kingdom

RDC: Professional Development of Teacher Educators
Subtheme: Professional roles of teacher educators

Partner / position / school-based teacher educator

Abstract

Aims
In initial teacher education (ITE) there is increased diversity in school-based experiences in Western countries. This research aimed to explore how teacher educators in schools in England, working in partnership with a Higher Education Institution (HEI), position themselves and to understand the impact that this role had on them and their student-teachers.

Question
This practice-based study took place in the first year of School Direct, a new route into teaching in England designed by groups of schools with an accredited provider of ITE. The schools may teach academic aspects of professional and subject knowledge, as well as facilitate the student-teachers’ school experiences. The involvement of school-based teacher educators (SBTEs) went beyond traditional mentoring. The research question was: how does taking on the newly designed role as a SBTE, and developing as a second-order practitioner (teacher of teaching, Murray and Male, 2005), impact on the teacher, student-teachers and HEI-based teacher educators (IBTEs) in terms of the positioning and professional learning of the SBTE?

Methodology
Eight of the thirteen (62%) School Direct SBTEs completed an emailed questionnaire. From these eight, five were selected using purposeful sampling and two took part in an interview as well as two IBTEs who had worked closely with them. Four of the student-teachers shared their experiences in a focus group. This research draws on a phenomenological approach. The research team was led by the School Direct programme lead and two researchers, who were not known by the participants, collected the data which were analysed using a two-staged categorisation process (Maxwell, 2013).

Results
The voices of the SBTEs and those working alongside them, gave a deep understanding of the complexities of this role. There were benefits in working in this way for all involved. The SBTEs commonly positioned themselves as learners from and with student-teachers and as complementary partners with IBTEs. They were developing a range of complex new skills beyond those required as a first-order practitioner (teacher of pupils) and emerging as gate-keepers of professional learning opportunities for student-teachers and their peers.

Conclusions and implications for practice
Although the research participants are from an alternative programme of ITE, their experience in taking responsibility for more of the academic aspects of the student-teachers’ learning warrants attention by policy-makers and programme designers, as there are increasing moves towards school-based teacher education internationally (for example Musset, 2010; Zeichner, 2014). The results
contribute to the improvement of teacher education by raising awareness around the impact of executing the role of mentor and academic tutor simultaneously. Where SBTEs were working as mentors, the tendency towards being positioned as ‘mentor’, even whilst new aspects of the role were being acquired, could have restricted their development. A job title, job description and dedicated time for the role would help to provide a more formal structure to school-based teacher education. Without formal recognition much may be expected of these SBTEs, masking the true cost. The European Commission report (2013: 10) realised that ‘failing to define teacher educators’ roles and the competencies they require, and the failure to acknowledge all those who play a part in teacher education, can be barriers to educational improvement and innovation’. Where the relationships between SBTEs and IBTEs are developing as complementary partners, the challenge of sharing responsibility and power can be explored, in order to strengthen the partnership. This could help to overcome the sense of fragmentation felt by some in the community of teacher educators. Strong professional learning communities for all teacher educators will be vital in establishing the roles of all teacher educators in the new landscape.

References
21 – Teacher Educators' Professional Learning in communities: The utility of in-house professional development

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RDC: Professional Development of Teacher Educators
Subtheme: Professional roles of teacher educators

Professional learning community / teacher educators / workplace learning

Abstract
The demands made on teacher educators (TE) coupled with their centrality in preparing future teachers has heighten the need for their involvement in continuous professional learning (e.g. European Commission, 2013; Zhu, 2010; Karagiorgi & Nicolaidou, 2013; Koster, Dengerink, Korthagen, & Lunenberg, 2008; Zohar, 2008). Programs initiated for TE's professional learning are becoming more common, using two main paradigms: programs initiated by associations (or academic institutions) in which TE from different institutions meet at one location (e.g. Reichenberg et al., 2013; Koster et al., 2008) and programs initiated within specific institutions for their own faculty (e.g. Cherup & Snyder, 2015; Hadar & Brody, 2010).

Both external and internal programs recognize the benefits of communal learning and often use this communal model. Communal learning is thought to be embedded in the context in which it operates, establishing reciprocal relationships expressed by influencing the institution, and being influenced by it (Brown Collins & Duguid, 1989). Thus, external and internal programs differ in the context with which TE interact in their learning experience. This paper explores the reciprocity between the community and the institutional context of an in-house community for TE. Analysing this reciprocity is central to understanding the communal model as means for in-house professional learning contexts.

Method
This study is based on seven consecutive yearlong in-house professional learning communities in which 49 TE collaborated on integrating thinking education into their practice. Several qualitative methods of data collection were used: in-depth individual and group interviews, session recordings, reflective writing, storyline reflection, teaching artefacts, and videos of practice. These data were analysed using grounded theory methodology (Strauss & Corbin, 2008). Identification of preliminary categories was followed by axial coding in which data were examined for similarities, differences, and complementarities across and within individual participants. Triangulation was achieved by corroborating themes from the various data sources, revealing multiple reciprocal influences between in-house learning communities and the institutional context.

Findings
The reciprocal relationship between TE and their affiliated institution was based on multiple influences. Institutional messages about relevance of communal activities were in decreasing TEs' vulnerability, insecurity, and fear of implementation. Such messages attract more TE to join and thus extend the community’s boundaries. Evidence was found for increased satisfaction, sense of belonging to the institution and commitment to changing teaching practice.
The community supported the institution's development and its capabilities as a social learning system. TEs' develop a sense of shared responsibility for student learning, appreciating that their achievement is enhanced by collaborating to put forward one consistent message to students. These findings significance stress the in-house community's power to advance the context in which they operate and by promoting the institution as a learning organization. Professional learning cannot be reduced to a random accumulation of individual knowledge. Expertise extends beyond the individual to enhance the collective. Institutions can draw on the collective power of a shared vision and collective intelligence of their faculty in pursuit of continuous improvement.

**Discussion topics**
Benefits and shortcomings of external and internal programs for professional learning. Different aspects of expertise related to these different contexts for professional learning.

**Interactive techniques**
Discussion topics will be raised before introducing our findings. Our findings will be introduced in light of the discussion that evolved with the participants to promote further discussion.

**Relevance to ATEE theme and RDC**
Particular relevance to the ‘professional development of teacher educators' RDC. We explore the utility of in-house professional learning communities for the learning of the institution and the TE in the institution. It also addresses the professional roles of TEs' sub-theme, as it relates to professional learning as one central role of TE.

**References**
Balancing content knowledge and pedagogical content knowledge in educating the best mathematics teachers: an Irish case study

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RDC: Science and Mathematics Education
Subtheme: Innovation

Content knowledge & pedagogical content knowledge / subject knowledge for teaching / teacher education programmes

Abstract

The idea that teachers need both to know their subject and to be skilled in teaching it is of long standing. However, Shulman’s seminal papers in the 1980s provided a focus and a language for discussing the balance that might be struck between the two aspects in teacher education programmes. In particular, his constructs content knowledge (CK) and pedagogical content knowledge (PCK) have been rich fields for subsequent research, initially for mathematics education but also with regard to the sciences. Work in the last ten years, notably in both Germany and the USA, has addressed the construction of test items to measure CK and PCK, and has provided empirical evidence that the two constructs are distinct, although related; also, relationships between teachers’ CK and PCK and their students’ achievement have been investigated. These findings have important implications for teacher education. Depending on the routes to qualified teacher status - which differ both between and within countries - teacher educators responding to the research may find it necessary to place more emphasis on one or the other component than has traditionally been the case. There may also be a need for authorities regulating membership of the teaching profession to move beyond looking only at teachers’ degrees and professional qualifications, and to assess aspects of teachers’ CK and PCK most relevant to student achievement.

This paper offers a case study; it addresses the changing emphases in mathematics teacher education for second-level teaching in the Republic of Ireland over the past fifty years. The main theoretical framework is provided by Shulman’s work and its subsequent developments, while cross-national categorisations of teacher education programmes also contribute. As a historical study, the paper relies chiefly on document analysis. However, especially since documentation from the early period is scarce, it also draws on interviews carried out with key participants in order to elicit their intentions, perceptions and / or experiences in designing or attending courses. The aims driving the study are:

(1) To identify the circumstances that led to priority being given to one construct or the other in Ireland at different periods;
(2) To highlight the roles played by different agencies - the state Department of Education, the (comparatively recently instituted) Teaching Council, the third-level providers of initial teacher education, and so forth - in requiring or providing the type of teacher education deemed appropriate at the time;
(3) To examine implications for future practice.

Hence, the main research question is: what are the main influences on the relative emphases given to CK and PCK over the period?

Influences identified as operating especially at specific times in the period include:
(a) Trends in mathematics education (teaching for understanding; problem solving; context / applications and Realistic Mathematics Education; use of ICT);

(b) National and international policy and curricular changes; for example, the introduction of two streams of secondary education - general and vocational - in 1989, and the introduction of the Junior Certificate examination in 1993.

(c) The role of professional associations and their journals, notably the Irish Secondary Mathematics Teachers’ Association (ISMTA), in promoting particular curricular and professional emphases.

(d) The role of international conferences and seminars in spreading new ideas and practices.

(e) The role of the state Department of Education in setting and changing teacher education standards and curricula.

(f) The role of external and internal quality assurance agencies in monitoring and reviewing teacher education programmes.

(g) The role of employers and other interest groups in shaping the kind of teachers that are regarded as desirable.

(h) The role of teachers themselves in shaping the kind of teachers they want to be.

(i) The role of the media in shaping public opinion and hence the demands on teacher education programmes.

(j) The role of government influences on teachers' pay and conditions of service, which can affect teachers' morale and hence their willingness to engage with new ideas and practices.

(k) The role of the heads of mathematics departments in shaping the kind of teachers that are recruited and trained.

(l) The role of university mathematics departments in shaping the kind of teacher education programmes that are offered.

(m) The role of the teaching councils in shaping the kind of teachers that are awarded qualified teacher status.

(n) The role of the third-level providers of initial teacher education in shaping the kind of teacher education programmes that are offered.

(o) The role of the employers of teachers in shaping the kind of teachers that are regarded as desirable.

(p) The role of the students in shaping the kind of teachers that are wanted.

(q) The role of the parents in shaping the kind of teachers that are wanted.

(r) The role of the public in shaping the kind of teachers that are wanted.

(s) The role of the government in shaping the kind of teachers that are wanted.
(b) Trends in mathematics ('modern mathematics'; increased emphasis on probability & statistics and discrete mathematics);
(c) Changing requirements for registering secondary teachers of mathematics;
(d) Findings from national and cross-national studies of student achievement (notably the Irish 'post-PISA panic' from PISA 2009);
(e) Priorities as perceived by key providers of initial and in-service teacher education;
(f) Changes in culture, especially the culture of education, that have led to a focus on utilitarian aims and to demands for greater accountability.

The work provides a development of themes addressed in previous years by the RDC 'Science and Mathematics Education.' For the conference presentation, the main focus will be on discussion of the relevance of the influences listed above, and others identified by participants, within their own education systems, and also on implications for educators in developing initial and continuing teacher education programmes for mathematics and science teaching.

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Prospective primary school teachers' knowledge of the ratio concept

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RDC: Science and Mathematics Education
Subtheme: Innovation

Prospective primary school teachers / ratio comparisons / ratio representations

Abstract
Prospective primary school teachers learn about some mathematics concepts in several courses besides the mathematics ones. This happens with the ratio concept which is a cross subject and instrumental concept. Research has shown that this concept is quite hard to master even though it is often used in school as well as in everyday life. This research aims at investigating prospective primary school teachers knowledge on the ratio concept, namely with regard to their ability to interpret and compare ratios in two different contexts. Data were collected from 50 prospective primary school teachers attending a Portuguese university by means of a questionnaire. Participants were asked to answer to two questions that involve the ratio concept: one of them deals with a pizza division and requires a comparison of homogeneous quantities; the other one deals with the speed concept and involves a comparison of heterogeneous quantities. Both questions require information from a graph to be picked up. Data analysis showed that, in the pizza question, participants in the study tend to use numerical representations under the format of a fraction, which led them to do correct comparison between two ratios. In the case of the speed question, prospective teachers showed more difficulties which seem to have been caused by the physical meaning of speed. Thus, the results suggest that most of these prospective teachers hold a limited and rigid knowledge of the ratio concept that may be due to learning process based on numerical representations and carried out within mathematics courses. An implication of this is that teacher educators need to find ways of developing prospective teachers’ cross subject knowledge of the ratio concept so that they can be better prepared to teach this concept to young children embedded into cross disciplinary everyday life contexts.
141 – Examining Pre-service Science Teachers in Learning and Practicing Inquiry-Based Learning Strategy

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RDC: Science and Mathematics Education
Subtheme: Innovation

Inquiry-based learning strategy / pre-services science teachers / Science Course Plans

Abstract
Scientific and technological researches shape in line with societies’ basic needs. Science education is one of the biggest factors shaping these researches. Science education encourages students to engage in problems related with their daily life, helps students to inquire these problems, promotes students to form solution for these problems and help them to suit their environments. Main aim of 2013 science education problem is to raise students who have scientific literacy, can research-inquire, make effective decisions, solve problems, self-confident, open to cooperation and learn lifelong with sustainable development consciousness. In this scope, inquiry-based learning strategy in which students take responsibility of their own learnings and construct knowledge in their minds is being used in 2013 science education program. In learning and teaching process, teacher acts as director and guide of learning process while students act as individuals who search source of the knowledge, inquire, explain and discuss. In this approach students can explain themselves easily, defend thoughts that they accept or reject and inquire knowledge with their colleagues. Within this scope, aim of this study is to examine pre-service science teachers’ learning situations of inquiry-based learning strategy, how it is practiced, issues while practicing, solutions to practice issues and how these solutions are applied. Fifteen senior pre-service science teachers participated in this study.

This research is a case study and conducted for two semester. In first semester pre-service science teachers have been trained with vision of 2013 Science Education Program, it’s inquiry-based learning strategy and applications. During second semester, pre-service science teachers were asked to choose objectives they would like from subjects of 6th, 7th and 8th grade science education program. After choice, pre-service science teachers were asked to prepare a Science Course Plan (SCP) with research-inquiry based learning about their chosen subject and each pre-service science teacher prepared 2 hour SCP. Prepared SCPs were evaluated by peers and tutor. Each pre-service science teacher re-arranged his/her SCP according to peer views and tutor view. After that pre-service science teachers conducted their first course teaching via their SCPs. With experience from first course introductions, pre-service science teachers prepared second SCPs and acted as tutor second time. During courses, peers and tutor were observed courses and took notes. In this study, pre-service science teachers’ course plans, peer and tutor observations forms and semi-structured interviews used as data collection tools. Data collected from observation form, SCPs and data from semi-structured interviews analyzed composedly. Literature examined about inquiry-based learning strategy and themes have been extracted. Pre-service science teachers’ data in SCPs and semi-structured interviews were compared with themes about research-inquiry based learning. During comparison process, views of pre-service science teachers categorized as weak, average and good levels.
According to obtained results, pre-service science teachers' understanding levels of inquiry-based learning strategy determined as weak at the end of first semester. However, in second semester understanding levels were increased to average and good levels. Results showed that pre-service science teachers comprehended inquiry-based learning strategy well. Pre-service science teachers indicated that they have difficulties because teacher used to pass information directly, encourages them to take notes and use question-answer-assessment method. In addition, pre-service teachers' lack of effective planning caused them problems during practice. What is more, pre-service teachers' lack of knowledge caused them difficulties while answering students' questions during courses. According to this study's findings, it can be said that pre-service science teachers comprehend inquiry-based learning strategy better after they prepare their own SCPs and practices for science education course.
184 – Chemistry in the e-lab laboratory
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RDC: Secondary Teacher Education
Subtheme: School-based teacher education

Chemistry teaching / e-learning / Remotely Controlled Laboratories (RCL) / Pedagogy

Abstract
Science is inherently experimental, and students can gain a better feel and insight into its principles, if they are active participants in scientific discovery. Science and technology improvement is a requirement for the development of our society. Science education plays an important role in educational systems and has the goal of enhancing scientific literacy in students and in future citizens.

To meet the needs and challenges of nowadays students it is necessary to explore new ways of teaching and of catching the attention of students. Among those are the use of new platforms [1-3], simulations [4] and remote labs [5-8].

In chemistry education, good understanding of theory is largely dependent on experimentation. So, it is important in class the experimentation in real laboratories but also the use of remote and virtual labs. In addition to promoting inquiry, experimentation can help students to acquire higher-order cognitive skills such as critical thinking, applying, synthesizing, decision making, and creativity, among other scientific skills.

The e-lab is a remotely controlled laboratory that allows students of primary and secondary school to consolidate their knowledge in science and hence develop their scientific skills [9, 10]. The success of this type of approach and platform has been confirmed in the classroom since 2009-2010, based on a pilot study [5, 11].

The e-lab in operation at Instituto Superior Técnico (IST) since 1999-2000 has recently undergone a usability study, and currently offers a simpler and user-friendly interface, allowing easy access to the chosen experiment. It has been used in the basic disciplines of Physics of the first cycle of higher education, but recently an extension of the contents to primary and secondary levels of education was created, with some experiments and respective online content revised for this purpose. Until now, most e-lab experiments are in Physics, but an effort has been made to implement new Chemistry experiments in the platform. Currently, the e-lab team is interested in performing remote chemistry experiments, which are more difficult to execute in this kind of environment. This is at present our main challenge. This investigation has started in 2012, and since then we have been studying the integration of several chemistry experiments in the e-lab platform. It was also in 2012 that we started to integrate e-lab experiments outside IST, where all e-lab experiments were located until then. This is of capital importance since if some experiments can be implemented in secondary schools, students will not only understand the physics or chemistry underlying the experiments, but also will notice the difficulties felt to create and implement the experiment, and will even get a deeper insight into it [12].
This proposal intends to discuss the following topics: i) how to access the e-lab platform; ii) presentation of an already existing e-lab chemistry experiment and its duplication (outside IST); iii) discussion on the new chemistry e-lab experiments under research; iv) future work and conclusions.

References
Development schools - a contribution to reduce a gap
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RDC: Secondary Teacher Education
Subtheme: School-based teacher education

Abstract
The purpose of this study is to explore the possibilities of developing closer cooperation between PPU Program (PPU) at Østfold University College, and three partner schools. In 2014 we invited three upper secondary schools to a research and development collaboration of students' practical training. During 2015 we have implemented some major measures, including:

- Students are at the same schools in both their training periods
- A permanent contact person from teacher education in each school
- Teacher educators teach the practice mentors in developing schools and the mentors teach the students on campus

Research Questions
Does a more binding cooperation between the practice field and teacher training contribute to an experience of professional learning for students and practice mentors?

Theoretical framework
We worked last year with Cochran-Smith & Lytle (1999) and Raan & Heggen (2014) studies of the development of the professional community. This position we have to some degree left and now we are concerned with the designation of the third room. The concept of the third room can be utilized to visualize the possibilities that lie in close cooperation between the loosely knotted parts in professional education. The various parts go out of their field of knowledge and into a new one that they create together (Zeichner 2010).

Methodological framework
Our overarching research strategy is very similar to the international research being named as Participatory Action Research (Pålshaugen, 1994). We have several times adopted The letter method (Berg, 2000). The method is performed by student teachers, and their mentors write letters to us about being students and mentors in practical training.

Preliminary findings
Students and mentors statement from the logs are arranged into three main categories; planning, change and interaction. Our findings provide some tendencies:

- More students appreciate being able to plan for the entire training period of 6 weeks. Some practice mentors have a much shorter planning perspective.
- Many students wish to experiment with different models for teaching. A number of practice mentors hesitate to use alternative approaches to management of learning, due to the interests of their own students' learning
- Students appreciate having the same mentor throughout both practice periods - conditional that they have a good relationship with the mentor
- Students think that it is important to reflect together with the mentor
- Mentors get renewed insight into teaching by being in a professional relationship with students
Relevance for European Education

We believe that we can initiate a process where we invite students into a third room where practical knowledge and knowledge gained from research can be integrated so that they do not appear as separate, different and conflicting sources of knowledge. This room can serve as an investigative community that is filled with activities and represent a dynamic and creative process. In that way, we also contribute to knowledge internationally on teacher education.

We want to discuss: - Is there relevant research that can help us to move on in our work? - How can we understand our preliminary findings?

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74 – Professional development policies for secondary school teachers in Argentina (2013-2016) and institutional improvement

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RDC: Secondary Teacher Education
Subtheme: School-based teacher education

In-service training / teachers' professional development / teachers' professional Identity

Abstract

Introduction
Recent transformations in Argentina establish secondary school as a compulsory level, the inclusion and retention of all students, and the distribution of one laptop per student and teacher. In this framework, the National Lifelong Learning Programme (2013-2016) was established to prioritize teachers and strengthen their teaching authority, ensuring in-service free training creating training spaces in schools.

In this context, this study intended to analyse the planned and implemented policy of in-service training for secondary school teachers (1). The goals were: to examine the policy's regulation, analyse the models, devices and training strategies, identify how teachers value the development experiences and what changes they bring about. The questions guiding the study are: what transformations come about in teachers' professional trajectories after the training? How do these training strategies result in changes in teachers' professional identities and in their conceptions about of educational inclusion, cultural diversity and ICT integration?

The methodological design is flexible, since it is adjusted based on the results and the theoretical work. Quantitative methods (descriptive analysis and cross variables) were used to systematize the supply of courses and qualitative methods (semi-structured interviews to policy makers and trainers) helped us to know the main features of the design and implementation of policy. In a second stage, narratives and biographical interviews will be carried out in order to reconstruct the trajectories and perspectives of teachers participating in the training.

Results
The analysis of the regulations shows that, for the first time in Argentina, in-service training teacher training has been designed as part of a more comprehensive education plan, with goals and work plans for each level of compulsory education and teacher training. The programme considers teaching as a key factor in the quality and improving education.

The main features of the programme are: a situated and school-centred approach that is implemented through five annual meetings for the whole teaching staff, the intention to implement devices and participatory institutional self-assessment plans; the work of teaching teams around institutional indicators and improvement plans. Other important features are: the massive and comprehensive coverage of the program that, in three cohorts, expects to cover all educational institutions and teachers within the public and private sector; and the participation of unions in a Permanent Technical Commission that agrees on the structure, implementation, as well as it monitors the program.
The training component that is done 'out of school' in the province of Buenos Aires (the one with the highest number of teachers and students in the country) shows the following tendencies: there is great diversity of training providers with a predominance of Initial Teacher Training Institutes; furthermore, the majority of training supply is linked to disciplinary upgrade, whereas less courses are oriented to ICT integration and inclusion and diversity issues.

Conclusions
There are areas and issues of vacancy in the training supply for secondary teachers. The tradition of disciplinary training continues to set the agenda of in-service training outside school. By contrast, political, pedagogical and curricular issues—recently transformed—are addressed within institutional meetings.

Discussion and practical implications
What are the institutional conditions and education authorities required to implement a school-centred training? How effective are the courses outside of school and how can they link up with the training provided by Initial Teacher Training Institutions?

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(1) Funded and evaluated by the Argentinian National Agency for Scientific and Technological Promotion, PICT-FONCyT 2014-1282 based at the Moreno National University, Principal Researcher Ph.D. Lea Vezub.
Developing Teacher Candidates' Ethical Knowledge Through Argumentation Based Course

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RDC: Teacher Education and Digital Technology
Subtheme: Professional roles of teacher educators

Argumentation / ethical knowledge /

Abstract
Since Shulman (1986) first declared teachers' knowledge of subject matter as 'missing paradigm', studies of teachers' knowledge regarded as an important aspect of educational research. Although to address 'missing paradigm' Shulman proposed seven types of knowledge, Pedagogical content knowledge (PCK) was considered as unique feature among other teachers knowledge bases and has been received special attention than others. While most scholars try to attempt PCK, some of the other knowledge bases have been ignored in most educational research such as 'Knowledge of educational ends, purposes, and values, and their philosophical and historical grounds'. Shulman's (1987) study 'Model of Pedagogical Reasoning and Action' addressed the role of values in teachers' knowledge (p. 15) and stressed that PCK and teacher's values are central of teaching (Gudmundsdottir, 1990). Therefore we believe teachers' values should be investigated as a teacher knowledge base to improve the quality of education. But values are more general statements while ethics relates to putting those values into effect in concrete situations. Therefore we focused on teachers' Ethical Knowledge which essential for teachers to navigate the complexities of daily practice (Campbell, 2010). Even though earlier studies point out magnitude of teachers' ethical problems such as not being aware of the ethical implications of their own actions and largely practice (Husu & Tirri, 2007) teacher education pays insufficient attention to teachers' ethical knowledge as a necessary element of their professional knowledge.

The purpose of this study was to develop teacher candidates entering an Alternative teacher certification program (ATCP) ethical knowledge through argumentation based course. Ethical knowledge was examined in three categories in this study: awareness, understanding and resolving ethical dilemma in ethical manner. During the course we created twelve case stories embedded different ethical dilemma based on the both actual and fictionalized situations. Every week, two of them were presented to class and discussed on during the class time. 72 (49 Female, 23 Male) teachers candidates enrolled ATCP were selected of this study. Pre-posttest single group research design was used to determine change in teacher candidates' ethical knowledge through argumentation based course. To collect data some case stories embedded different ethical dilemmas and set of questions interested in these dilemmas were presented. Constant comparative method has been adapted to data analyses. Awareness of ethical dilemma was identified as how your actions affect other people. Pre and posttest results show that argumentation based course was helpful in developing teacher candidates' awareness of ethical dilemma.

Differences between pre and post test results show that teacher candidates began to be aware of both short and long term results of their actions. We also found that while most teacher candidates tend to tolerate the results of some action if the results have not extensive influence in pretest results, posttest show this idea was changed. Understanding of ethical dilemma was identified as knowledge about ethic codes for teachers. Compared the pretest results most teacher candidates
apparently gain knowledge and consider ethic codes before performing an action. Teacher candidates were also showed progress handling ethical dilemmas in ethical manner when faced a situation. Relationship among awareness of ethical dilemma, understanding and of ethical dilemmas and handling ethical dilemmas in ethical manner were also investigated. It was founded that understanding ethic codes may help teachers in clarity, and consistency in ethical practice and resolve ethical dilemma. Contribution and implications of the current study from a theoretical and practical perspective are; the argumentation based courses in ethic education quite effective to sheds light on awareness of ethical dilemmas, understanding of ethical dilemmas and resolving these in ethical manner due to intensive interpersonal interactions.

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128 – Dynamics of a professional social network of teacher educators

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RDC: Teacher Education and Digital Technology
Subtheme: Professional roles of teacher educators

Community of practice / social network analysis / teacher educators

Abstract

Social networking has become part of the contemporary culture of humanity and more and more educators use them for personal and professional purposes. Participation in social networks exposes educators to new ideas and concepts; allows them to share their practical knowledge and discuss authentic issues thus giving insights into their activity; promotes professional relationships; enhances feelings of a commitment to the community or practice; and empowers their social and professional capital (Baker-Doyle & Yoon, 2011; Cao, Klamma, Pham & Vuoricari, 2012).

The network 'Shluvim' is the first professional social network designed for teachers and teacher educators in Israel. It was founded in 2010 following the initiative of the MOFET Institute and quickly became a place where educators share their professional life experiences and exchange views and positions in relation to contemporary issues in education. Over three years the number of network participants reached 2068. They created a network of relationships and diverse interactions, shared a variety of information units (messages, comments, files, favorites, pictures, etc.) and responded to various objects.

The present study examined the characteristics of the interactions of the participants in a professional social network using the method of social network analysis as well as the role of two network managers in its dissemination among educators.

Research

The data was collected using: (a) the network database including information about participants' actions and their interrelations, and (b) interviews with an administrative and with pedagogical managers. Data analysis was done using the tools of social network analysis, which allows computing metrics of the entire network as well as the characteristics of the individual activities of participants (Scott, 1991). Interviews with two network managers related to: initiating the network, strategies in promoting the network, satisfaction factors, challenges in network managing and the recommendations for the professional social networks' managers.

Findings

The degree of activity of the participants was different: few of them were quite active, while many were rather passive participants. Such a pattern is typical to social networks like Facebook, Twitter and others.

It was found that the network participants were divided into two groups: those who belong to the central core group (about 400 individuals), and participants who belong to peripheral subgroups. The core team was created in the first months of the network and included mainly people responsible for ICT in the MOFET Institute and colleges of education, leaders of in-service teacher education and the Ministry of Education's managers. This group was relatively stable in terms of presence on the network and its activities. By contrast, the lifespan of the subgroups was relatively short. Usually these were groups of students attending the same course at the colleges or educators from various frameworks dealing with professional development learning.
Differences were found between the patterns of changes in time between the various types of interactions. Interactions reflecting the social aspect - proposing friendship and writing posts on the wall - are characterized by a peak at the beginning of the network's existence and then a slower pace of activity. Professional interactions - responses to blog posts and other objects (files, favorites, surveys, etc.) - were characterized by a sustained activity during the investigated period with a somewhat increase in the beginning of semesters and down in the breaks and holidays.

Network analysis shows that three out of the five types of professional capital within the network mentioned by Wenger, Trayner & de Laat (2011) were profound in the Shluvim network: social capital, tangible capital (resources) and learning capital (transformed ability to learn).

References
145 – Development of a Professional Development Scale for EFL Teachers

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RDC: Professional Development of Teachers
Subtheme: Innovation

Factor analysis / individually-guided activities / EFL teachers / scale development

Abstract
This study, part of a Marie Curie Career Integration Grant supported by the European Commission, is set out to develop a scale to understand English as a Foreign Language (EFL) teachers' individually-guided and professional activities. One of the objectives of this large-scale project is to investigate foreign language teachers' professional development activities in Turkey in order to identify any needs for new, innovative professional development programs. In order to find out what types of professional development activities EFL teachers are engaged in, we first conducted structured individual interviews with 26 teachers across Turkey. Since Creswell (2007) suggests developing questionnaires based on preliminary descriptive data, the scale was initially drafted in light of the data coming from these 26 interviews. The initial draft was reviewed by field experts and was piloted with seven EFL teachers and in each round, necessary revisions were carried out. A test-retest reliability was also conducted with 31 teachers, and .86. was obtained as the correlation coefficient.

The final draft had three sections; demographics (16 questions) and professional development scale of EFL teachers (61 questions) and 4 open-ended questions. Even though Özçelik (2010) claims that a sample of 400 participants would be sufficient for such a scale development study, we have already collected data from more than 800 teachers and the data collection is still in progress.

When analyzing data, factor analysis will be conducted. The model we are planning for data analysis is principal component analysis (PCA). With current data, when the PCA was conducted by restricting the analysis to five factors and without using any rotation methods, 49% of the total variance accounted for the principal components. Since it is assumed that the factors are correlated with one another, an oblimin rotation procedure will be preferred for the analyses. The items that are irrelevant to any factors and items that are closely correlated with more than one factor will be removed from the scale and the analyses will be repeated once again. We are still in the process of labeling the factors; however, as of now, some of the possible factors are 'individually guided activities geared towards language proficiency', 'need for professional development', 'reasons for lack of professional training' and 'individual/institutional professional development activities'.

At the end of this study, a scale having high validity and reliability will be developed in order to obtain data regarding EFL teachers' professional development in many aspects. It is hoped that this scale will have important contributions both to the literature on EFL teacher development and to the real-life practices in different educational settings. Karaata (2010) reveals that the majority of EFL teachers feels a need for professional development. In order to design and develop efficient professional development programs, a needs analysis towards understanding EFL teachers' professional development activities both at the individual and professional levels bears a lot of importance because it is known that teachers are reluctant to join the professional development activities if they do not feel a need for them (Fullan, 2005; Hixon & Buckenmeyer, 2009).
The scale that the current study has been trying to develop will provide future studies with an instrument to investigate EFL teachers' professional development activities in a scientific and systematic way with its strong statistical methods. The scale will also be applied in other European countries which will allow for cross-cultural comparisons. In addition, the final form of this scale will help gather evidenced-based data on EFL teachers' professional development regarding their current conditions and needs to convince the stakeholders in teacher education and development for any future improvements, revisions, and innovations in professional development practices and programs.

References
A design approach for teachers: a feasible way for teachers to improve education in their school practice

Annoesjka Boersma, Roeland Breukelman, Windesheim University of Applied Sciences, the Netherlands

RDC: In-Service learning and the Development of Practice
Subtheme: Innovation
ADDIE-model / general education / teacher research

In teacher education students learn how to conduct research as a way to improve education. However, a teaching profession and doing research are not easy to combine in everyday practice. During this round table we present an approach to design based research that offered eight Dutch secondary school teachers a feasible way to improve education in their school practice. We aim to discuss the strengths and limitations of this teacher design approach, as well as its value for other teachers. We especially invite teachers (educators) who already do, or want to, improve their education by conducting design based research.

During a research project, funded by TechYourFuture, eight teachers and two researchers jointly conducted a design based research that focused on the development of meaningful science and technology education for students in the first three grades of secondary general education. In the first school year the researchers provided the teachers with tools to attend to the phases of the ADDIE-model (Analysis, Design, Development, Implementation & Evaluation (Grafinger, 1988)) while creating innovative curriculum units. A communicative approach (Visscher-Voerman & Gustafson, 2004) was used: the researchers and teachers communicated and negotiated their perceptions of and opinions on when science and technology education would be truly meaningful for students, and the curriculum units to make. The teachers mostly recognized the value of the ADDIE-phases, but found the communicative approach too time consuming, and too much thinking and too little doing. In response to this, the researchers formulated the following research question: What would be a feasible way for teachers to improve education in their school practice based on the ADDIE-model?

The second school year, the teachers were asked to redesign the curriculum units in a way that would suit them better. This meant that the teachers could use the tools offered in the previous year, but also put them aside and pursue a different strategy then the one they started out with in the first year. Data were gathered by means of interviews and document analysis. The teachers were interviewed about the design strategies used for the redesign of their curriculum units, and specifically about why they conducted their actions and activities in the way they did during the process of design. The researchers also gathered the reports of the meetings in which the teachers further developed their units, and the teacher and student materials, in order to better reconstruct the design process. The analysis was done using matrix-display techniques (Huberman & Miles, 1994) in order to reveal the different strategies - actions and activities - employed by the teachers as compared to the activities proposed in the ADDIE-model. The matrices enabled the researchers to search for underlying rationales for the teachers' actions, and to arrive at a design approach that represents the teachers' preferred styles and opportunities in their everyday school practice for developing curriculum units for innovative education. Subsequently, the design approach was used to develop tools that may help other teachers to improve education.
During the round table we would like to discuss the value of the design approach for teachers by means of the following questions:

- Is teacher research necessary for the improvement of education, and if so what are the specifications of such teacher research?
- Can (student) teachers design innovative education without the help of researchers, and if so, what competencies would they need to develop to do so?
- Can pupils play a part in the design of innovative education, and if so, how?

With this focus on requirements of teacher research and competencies of teachers we aim to attend to the conference theme of educating the best teachers.

References
80 – Teacher Mentorship-Possibilities for Advancement of Learning by Mentors, Mentees and Students in the Classroom

Shawna Faber, The University of British Columbia, Canada

RDC: In-Service learning and the Development of Practice
Subtheme: School-based teacher education

Evaluation / mentor / mentorship

Abstract

Historically in British Columbia (BC) Canada, the induction of new teachers into the teaching profession has been delivered through initiatives and resources within individual school districts and local school boards. Although there are many examples of excellent induction programs throughout the province, including effective mentorship programs, the implementation of practices and procedures often lack systemic vision, long-range planning, training for participants, and dependable funding. The past and current experience for new teachers entering the profession varies widely across the province, adversely affected by shrinking budgets, employment instability, unmanageable assignments, isolation in more rural areas, and lack of inclusion within collegial communities.

The New Teacher Mentoring Project (NTMP) has emerged in 2012/13 from aligned interest within the BC Teachers’ Federation, the University of British Columbia, and the BC School Superintendents’ Association, and the BC Ministry of Education to seek a more formalized and integrated system of support for inducting, developing, and retaining teachers in BC. This program has reached many districts in the province and includes a formal evaluation which focuses on program improvement. Principles of the NTMP are:

- to provide a coherent, research-based, and sustainable system of support for teachers in their early years throughout the province of BC
- to be responsive to the diversity and distinctiveness of district cultures and practices in all regions of BC
- ensure that mentorship is non-evaluative and non-remedial, and that participation is voluntary
- demonstrate joint commitment from the participating district administration and teacher union
- to reach out to educators in rural areas of BC
- to provide professional learning through inquiry and critical reflection on practice.

In sum, the New Teacher Mentoring Project (NTMP) is committed to building a mentoring culture within British Columbia schools that welcomes BC’s newest teachers into the profession, provides for continuity of teachers’ embedded professional learning, and reinvigorates teaching and learning communities.

Next steps for growth and development of the NTMP are to:

- continue developing sustainable models of mentorship with districts
- build strong peer mentoring relationships that contribute to strengthening collaboration and innovation within teaching communities
- continue to explore ways to use technology to better support new teachers in all areas of BC
- continue to gather, analyze and disseminate research and evaluation data to inform development and implementation of province-wide induction policy and practice.
The round table discussion will include concepts related to the above steps as well as the following three questions:

- What are the teacher mentorship models in practice that have been found to be successful?
- How is success defined when evaluating teacher mentoring?
- How can we mentor each other in creating and delivering teacher mentorship programs? In other words, how can successful theoretically grounded mentoring practices be shared so as to improve mentoring practices in the field?

Delegates in the round table should have some experience with teacher mentoring or an interest in teacher mentorship programs. This topic is highly relevant to both the subtheme of school-based teacher education and the RDC of in-service learning and the development of practice as mentorship programs by their very nature are teacher learning in practice. Mentoring is done by teachers for teachers in school and classroom settings and can influence the practice of more than just those directly involved in mentoring.
Using a lab school for improving early childhood education

Annerieke Boland, Anne Arbouw, Inouk Boerma, iPabo University of Applied Sciences, the Netherlands

RDC: Primary and Pre-primary education
Subtheme: Innovation

Lab school / play-based learning

Abstract
This study focuses on developing routines for ECE-teachers to support children's self-regulation in play. The teachers and children were observed daily in our lab school, an innovative classroom especially created for pre-primary education. This lab school is located in the University of Applied Sciences for teacher education iPabo in Amsterdam, which allows maximum involvement of the researchers. The participants in our study were children (age 4-6) from six kindergarten classes and their teachers, who have visited the lab school daily since autumn 2015. Each of the classes has visited the lab school for 2.5 hours each day, for three weeks in a row.

The seven ECE-teachers strive to transform their education style from teacher-directed towards a play-based curriculum in which children are supported to construct and carry out their own plans (Van Oers, 2013). This ambition is nowadays rather common among ECE-teachers in the Netherlands, but after decennia in which teacher-directed programs were promoted, many Dutch teachers feel incompetent or insecure of doing so (Boland, 2015). The same holds for the teachers of the school involved in the current project. In that sense this case study might form an exemplar for many other schools confronted with the same challenges.

In cooperation with the ECE-teachers, we established that the most urgent research question was which routines the teachers might use to support children's self-regulation in play (Lavers et al., 2004). The children are used to strict guidance of the teachers and feel lost when they are allowed to play as they want. This often results in superficial and un-focused play. The teachers, in turn, do not know how to create structure for children and how to support the quality of play, while at the same time allowing them freedom and autonomy. This makes them feel uncomfortable and causes stress. From March 2016 the ECE-teachers and researchers from the teacher education university are conducting design-based research on the above question both in the lab school of the university and in their own classrooms. Based on theory and practical experience a first design of routines has been developed and each teacher works with that design. Based on teacher-experiences and observations of children's behavior, the routines will be evaluated and adjusted to better fit the needs of teachers and children.

The intended output is: 1) a design for routines that helps children deal with their sudden freedom of learning and that is acceptable for teachers; and 2) more insight in the theoretical and personal dilemma's that the teachers encounter in this process of creating routines (Kemple, 1996).

There are two main issues we would like to discuss with you in the session: First, which procedures would bring to light inner conflicts and dilemmas of the teachers in creating this new form of education? And in what way could we make their considerations of help to other ECE-teachers?
Second, how could this research project adhere to the education of student teachers at our university? How could we involve the student teachers in the lab school without disturbing the natural course of the research process? And what role do we as teacher educators and researchers take in this project? Although the student teachers of our university are incidentally involved in the lab school, they do not yet benefit optimally from the research process that is taking place. In this innovative project, practice research in a lab school by teacher educators is the means for integrating goals at different levels: generating knowledge and practical tools for complex educational problems, stimulating children’s development, and professionalisation of (student) teachers.

References
Abstract

Theoretical background

The future is changing and so education needs to change as well. This is why we started a whole new teacher training. The profile of a graduate teacher from Teachers College is what we call a Teacher Artist. The way we see a Teacher Artist is formulated by a group of teacher trainers, lectors, educationalists, practicing teachers and our current teacher trainees.

A Teacher Artist is someone who:

- is aware of his role in society and is a citizen of the world
- sees opportunities and is creative
- is willing to take on a challenge, to initiate changes in the school where he works
- facilitates opportunities for inquiry-based learning
- is patient and can deal with uncertainty
- is not afraid to make mistakes but learns from them
- is able to develop an integrated curriculum
- has a well formed vision on education and shares this with colleagues
- learns in a network of teachers and finds this important
- has high ambitions for the students and himself to achieve the best possible result
- has a passion for education/teaching
- has very good pedagogical and didactic skills

To achieve this in our trainees, we had to create a model of competencies that gives direction to what needs to be learned and what we, as the teacher trainers, need to offer in the program in order to enable the trainees to become a Teacher Artist. We used the competencies that Michael Fullan (2014) described:

- Character
- Collaboration
- Communication
- Creativity
- Citizenship
- Critical thinking
- Ethical entrepreneurship

In the middle of this model we included another three competencies:

- Pedagogical knowledge
- Content knowledge
- Didactic knowledge


In the Netherlands these three competencies are mandatory for teachers. And in our opinion it is not possible to be a great teacher without these competencies. We build the curriculum around this model of competencies.

To create optimal conditions to work on the competencies as mentioned above, we work according to the principles of Art Based Learning. The motto of our program is ‘mastering creativity’ (Lutters, 2013). Art Based Learning, in short, means to learn through the arts and the way artists observe, listen, think in possibilities, get inspired and inspire others. In our curriculum the subjects are based on the liberal arts. The liberal arts can be divided in three categories:

- Humanities (art, English, foreign languages, history, philosophy)
- Social sciences (anthropology, communication, politics, psychology, sociology)
- Sciences (biology, geology, physics, mathematics)

(Kanapliova, 2013) We try to teach these subjects in an integrated way. In this way the content is more meaningful to the teacher trainees and can be used in their practice immediately.
**Importance of this subject**

In our opinion a new kind of teacher is needed to educate children for jobs which do not yet exist. Jobs for which another kind of knowledge, skills and attitude are necessary. We find it very important to make sure our teacher trainer program is preparing prospective teachers properly for teaching the children for the future.

**Expectations**

This workshop is for people who are interested in a teacher training program that is influenced by Art Based Learning and New Pedagogies of Deep Learning, that gives the learner a central role in its learning process, that has a great focus on personal development and has alternative ways of assessment, are welcome at this workshop.

Our program is still in development, so we would also like to receive feedback on our teacher training program. This way we hope to keep on developing and improving the curriculum.
26 – Diversity in Schools

Ellie Abdi, Montclair State University - East Orange School District, United States of America

RDC: Education for Social Justice, Equity and Diversity
Subtheme: School-based teacher education

Cultures / race / special education / homosexuality

Abstract
This is a newly published research based book written by me and is divided into two parts. The first part in this workshop is on educating our children in diverse America. This part is written for teachers, college students, parents, and the general public that is interested in understanding the social and cultural matrix of American education. Certain reasoning and considerations for delivering educational aspirations are provided and reminded. Participants in the workshop are introduced to sound research grounded in various issues with reflection on critically important concerns such as multiculturalism, language, immigration and acceptance, class, ethnicity and race, homosexuality, exceptionality, and religion in today's diverse society. It highlights on why teachers should evaluate the classroom and school environment to bring all children under the umbrella of knowledge.

As Americans, we have dealt with issue of diversity for couple of centuries and we have grasped it to best of our knowledge at the present time however it does not translate that we should not expand our research. Schools across Europe are seeing a rise in the number of children born and raised in different countries. This population is added to already diverse European schools which can place strain on languages teaching capacity as well as mixture of other diversity issues. In fact, students born outside the EU are twice as likely to leave school early. At the same time, increased diversity is an opportunity to make schools more inclusive, creative and open-minded. The Recommendation of the European Parliament and of the Council on 18 December 2006 was on key competences for lifelong learning, which highlights the importance of social and civic competences and of cultural awareness. It was suggested that appropriate provision be made for those who due to educational disadvantages need particular support to fulfil their educational potential. The European Council conclusions of March 13 and 14, 2008 urged Member States to take concrete action to improve the achievement levels of learners with a migrant background.

This workshop has been presented at 98th Annual Convention of New Jersey Association for Health, Physical Education, Recreation and Dance (NJAHPERD) and will be presented in the month of May at Society of Health And Physical Education (SHAPE-America) Eastern Conference. The power point presentation will be furnished upon request. Effective communication and collaboration skills and resources are shown to the participants on how to interact with a global society and how to consider multiple perspectives, value diversity, and promote cultural understanding. After explanation and activities, audience will be able to answer on different aspects of diversity issues. One aim of an educator is to promote diversity and crave for children to grow up in a world free of discrimination to reach dreams.

After discussion and short collaboration projects, audience will be able to answer why many young people who do not act in line with stereotypes can be subjected to severe bullying at schools. The audience can apply the learned knowledge in the classroom and wider society to appreciate and learn to celebrate differences. How learners grow and develop, recognizing that patterns of learning
and development vary individually will be understood by participants. To work with others in creating environments that support individual and collaborative learning will be explored. After explanation and proper exercises audience will gain proper knowledge on how an educator needs to strive toward inclusion and never allow students to experience rejection or exclusion despite a world in which racism and other forms of bias continue to impact education. The audience is able to reflect on how to value people regardless of the one’s skin color, physical abilities, or the spoken language.

References
101 – Creativity Unveiled

Eric Verouden, Fontys University of Applied Sciences, the Netherlands

RDC: Professional Development of Teacher Educators
Subtheme: Innovation

Creativity / dialogue / images

Abstract
It was almost ten years ago that Sir Ken Robinson's Tedtalk 'School kills creativity' (Robinson, 2016) was posted on the internet. Being a teacher, you don't have to necessarily agree with all the content, to be touched by this talk. In fact, many teachers think evoking creativity in pupils is part of their job. At the same time, governments and technology industries worldwide advocate 21st Century Skills for education (Winner, Goldstein & Vincent-Lancrin, 2013). Creativity is a prominent part of these skills. Many primary and secondary schools look into means to root creativity in their curricula. However, if we make mention of creativity, what do we mean? And what is important to know for teacher educators, within the context of our exemplary work? Based on academic research on creativity and education, an outline ‘Images of Creativity’ (Verouden, 2015) was produced to prevent misconception. This outline is used to start a dialogue on our images of creativity, and how creativity works in classrooms. In the workshop we proceed and deepen our comprehension by using the theatrical skill of sculpturing (Boal, 1974). This technique is both simple and effective. No theatrical experience is needed for the participants.

Aim of the workshop is to broaden our views on creativity and to find a common language to discuss it in schools. If schools struggle with the topic of creativity in their curricula, it is our task, as teacher educators, to evoke a wide ranch of creativity in our lessons and make these images explicit. The program of the workshop contains: an introduction on creativity, dialogue-in-a-game (with a deck of cards), sculpturing, and comparing good practices.

Participants are asked to be open minded towards research using physical statues. Enthusiasm and curiosity will help achieve our aims.

Eric Verouden (Rotterdam, 1961) is an actor, teacher educator at Fontys Lerarenopleiding Tilburg and coach ‘arts education’ at Babel in 's-Hertogenbosch.
References
<https://www.ted.com/talks/ken_robinson_says_school_kills_creativity>
160 – Preparing all teachers to reach second language learners in mainstream classrooms

Carine Strebel, Stetson University, United States of America

RDC: Professional Development of Teacher Educators
Subtheme: Professional roles of teacher educators

Immigrant students / pre-service teachers / second language learners

Abstract
Demographic data in the United States for the past three decades indicate that children of immigrant and refugee groups for whom English is not their native language (i.e., English language learners) represent the fastest-growing student body in public schools. These students surely bring extraordinarily rich linguistic and cultural backgrounds to the Kindergarten through secondary classroom landscapes. At the same time, however, these assets pose significant language, literacy, and content learning challenges that often prevent the children from reaching high academic achievement in the mainstream classroom. Thus, having recognized the achievement gap between native-English speaking children and English language learners, schools allocate tremendous amounts of financial and personnel power resources to provide professional development for practicing teachers with the goal of equipping them with the necessary knowledge and skills to become effective teachers of second language learners.

European countries, like the United States, have experienced the difficulty of providing culturally responsive, academic content, and literacy-based instruction for immigrant and migrant children for some time. Recent flows of refugees to European countries that offer a safe haven from economic and war-related hardships, however, have exacerbated the need for teachers who are prepared to effectively educate the new arrivals in school systems, regardless of their proficiency in the second language.

One solution to increasing the number of such teachers is not through professional development of practicing teachers. Instead, the solution lays in preparing future teachers to effectively impact the education of second language learners in mainstream classrooms while they are developing their teaching skills. The main goal of this proposed session is to outline a realistic teacher preparation curriculum integration model, the One Plus model, that teacher educators can use as a guide to address the needs of this special student population. Designed to be flexible yet comprehensive, the model incorporates all aspects of teacher candidate preparation, including courses, field/clinical experiences, candidate assessment, faculty development and scholarship, and program administration, evaluation, and accreditation. The phrase One Plus is used to indicate the stackable nature of the model, which enables programs to build up from simply developing candidates’ rudimentary knowledge and skills regarding educating ELs to attaining qualification in teaching various subjects to them.

If teacher candidates are to be equipped to promote second language learners’ academic achievement and language development, all faculty who prepare them should support this important goal throughout the program of study: from education foundation courses (e.g., learning theory, educational psychology) to specific methods courses, and on to the final teaching practicum. Embedding a second language learner focus into teacher preparation courses and field and clinical experiences is essential.
experiences requires meaningful, sustained interdisciplinary collaboration between language acquisition faculty (or expert consultants) and other teacher preparation faculty. To support this collaboration, the One Plus model contains a mentoring protocol and criteria for identifying topics, objectives, and assessments for embedded content. The presenter will dedicate a large portion of the session time to walking audience members through concrete examples of how course readings, classroom discussions, and assignments of existing teacher preparation coursework can be enhanced to include questions of educating second language learners/immigrant/migrant students.

Examples of strategies to hold an interactive session will consist of, but are not limited to, the following:
- A game-based learning platform such as Kahoot to gauge audience members' current knowledge of second language acquisition and cultural diversity topics
- small-group discussions with whole-group debriefing sessions
- analysis of course syllabi of infused courses in a variety of disciplines and from different teacher education institutions.

References
18 – Lifelong learning; what does it take? Partnership in Education

Edmée Suasso de Lima de Prado, Saxion University of Applied Sciences/Velon, the Netherlands,
Maarten Haalboom, Saxion University of Applied Sciences, the Netherlands

RDC: Professional Development of Teachers
Subtheme: School-based teacher education

Educational partnership / induction / lifelong learning

Abstract

General abstract of the workshop
This workshop will be based on our experience in work based learning and lifelong learning, research income and curriculum tools.
The current goals of so called Professional Development School Partnership Twente are to share responsibility in educating and to promote lifelong learning.
For these reasons primary school teachers are educated at Saxion University of Applied Sciences, so they can educate our students in practice and teach students in a kind of working labs. This cooperation has become a region wide reconciliation of the curriculum. The successful experiences and revenues have led to a gradual increase in the number of boards and schools involved. The joint education responsibility has the motto: ‘everyone learns’. This concerns all staff members of all stakeholders.

Theme and theoretical background
Lifelong learning and educational partnership
Shaping career-long perspectives on teaching, ET2020 Working Group on Schools Policy (2014/15)
Teacher efficacy and support induction and lifelong learning (Marieke Krakers)
Teacher learning and assessing professional quality (ICALT, W. van der Grift)

Importance of this topic related to current development in teacher education
Leading and supporting pupil learning requires every teacher to embark on a professional, social and personal journey that involves career-long professional development within collaborative learning environments.
Initial Teacher Education lays the groundwork and sets the direction for this journey.
National, regional and local governments and stakeholders have a shared responsibility to facilitate and sustain this in close collaboration. (ET2020 Working Group on Schools Policy February 2014-October 2015)

Program of the workshop
Interacting about our work as teacher educators and finding ways of strengthening Educational Partnerships.
We will start with a short inventory of delegates and their experiences with work-based learning and Educational partnerships. After that we give a sketch of the Dutch situation based on good practice in the Twente region and on some research. Marieke Krakers (2015) researched teacher efficacy in the period of professional induction to get a clear view of what is required after graduation. This research has shown which elements are important for coaching of beginning teachers. Research of Wim van de Grift (2007) investigation resulted in the ICALT assessment instrument for evaluating
pedagogical-didactic action of teachers. Results we use in order to strengthen the connection to induction and facilitate life-long learning. After this presentation we will work in groups, using several methods and available tools for transfer to the various (international) contexts. Finally we collect the findings and explanations of the participants and invite them to specify implications for their own practice; What will be your next step?

**Audience and expectations from the participants**
Everyone involved in work-based learning: Teacher educators, curriculum developers, coaches, policymakers, researchers.
Transfer of knowledge by means of various tools.

**Learning gains for the participants**
What is the meaning of Educational Partnership for the development of the curriculum of teacher education and choices for induction and lifelong learning?
Each participant in this workshop can, based on the information and tools, work on the meaning of this for their own regional and national context. The main objective is to achieve an understanding of the relationship between curricula and teacher education following the induction of beginning teachers.

**Relevance to the ATEE annual conference theme or sub-theme and/or relevance to one of the ATEE’s RDC’s**
Lifelong Learning, continuance learning, induction, Work Based Learning, positioning of the boards, importance of cooperation in Educational Partnership
References
Wim van de Grift (2007), Quality of teaching in four European countries, application of an assessment instrument (ICALT list)
Marieke Krakers (2015), Research Teacher efficacy
Jan van den Akker (2003), Curricular spider web and System spider web
ET2020 Working Group on Schools Policy (2014/15), Schools policy Education & Training 2020
211 – Waiting for Superman: How teacher education prepares teachers for a complex profession

Marco Snoek, Amsterdam University of Applied Sciences, the Netherlands, Thomas Pritzkow, European Commission, Belgium

RDC: N/A
Subtheme: School-based teacher education

European Commission / teacher education

Abstract
There is a wide consensus that the complexity of education is increasing and with it the expectation towards teachers. Therefore, the quality of how teachers are prepared for their role has become a focus for policy attention.

Teachers have to give fitting and inclusive education to their students, for high educational results, social competencies, motivation and passion. They have to enter into relations with the parents, alter their lessons if there are new insights, use modern technology, develop leadership and entrepreneurship etc.

Newly qualified teachers who start working in schools often have full responsibility for their classes, in the same way as teachers who have many years of experience, and are expected to be able to carry out the tasks that experienced teachers perform. This creates a context in which Initial Teacher Education (ITE) is expected to cover all qualities that teachers need, leaving little stimulus for further professional development after qualifying as a teacher. This leads to a packed ITE curriculum and conflicting needs – between ensuring minimum standards of teacher graduates and understanding teaching as a creative, innovative profession.

In order to support teachers in the many challenges they face, the question raises whether the structure of the profession and the teacher education is adequate. This raises three questions:

1. How can we shape the profession of teacher so that there would be a continuum of professional development?
2. How can we make the profession more collaborative?
3. What role can the initial teacher education play in all this?

A work group of the European Commission consisting of representatives of education ministries from different countries has explored good practices, problems and dilemmas and translated these to recommendations which were published in November 2015.

This keynote will address the question how teachers can be prepared for a complex profession and what role teacher educators can have in this. This will be done on the basis of the publication of the Working Group Schools ‘Shaping career long perspectives on teaching, a guide on policies to improve initial teacher education’. 
**133 – Motivate, educators' core business - A motivational minor based on the principle: practice what you preach, will supply the participants with tools to motivate students**

*Ellen Siebenlist, Fontys University of Applied Sciences, the Netherlands*

RDC: N/A  
Subtheme: Innovation

**Abstract**

Practice what you preach is the logical foundation of this active workshop. Participants gain more information about how to motivate students in their own curriculum, by experiencing and applying several motivational principles during the workshop. The content is based on the effective minor 'The motivated brain'. In this minor third year students of the teacher training college experience and apply many motivational principles through the design of the minor and use these also for their own practice. In the workshop there will be a good alternation ranging from personal experiences, motivational theories and examples from students.

**Theme, theory**

When students are intrinsic motivated, deeper learning and higher involvement can take place. Literature about motivation (Deci & Ryan, 2009; Martens & Boekaerts, 2007, Ros, Castelijns, Van Loon, Verbeeck, 2014; Schuit, De Vrieze, Sleegers, 2011; Vreugdenhil, 2014) describe four important topics to gain motivation: Autonomy, Belonging, Competence and the role of the Teacher (ABC & T). At the end of the minor a valid questionnaire from Sierens and Vansteenkiste (2009) showed, that the students were more intrinsically motivated by using different kind of principles to realise ABC & T. Examples of principles used are regarding:

- A = giving choices,
- B = being part of a group or work alone,
- C = achieving competence, by personal goals and appropriate guidance
- T = informal interactions, structure and permanent coaching.

**Important developments**

Three months ago, the Dutch government was advised about education in the future (Platform 2032). The report states that teachers have to challenge their students in order to motivate them to develop themselves. When students are intrinsically motivated it may result in deeper learning, which results in a longer remembrance and easier use of the content learned, as well as more involvement in and more commitment to their own learning process (self-regulation). (Ros, A. e.a., 2014; Martens & Boekaerts, 2007). A report about 21st century skills (Trilleng & Felham, 2009) also emphasizes the importance of self-regulation for student (-teachers) regarding lifetime education.

**Program**

The program applies the 5-step procedure (Korthagen, 2001) for good reflections and interactions.  
*Fase 1 (Pre-)Structuring*  
The lecturers introduce the main question to be discussed: What do you do to motivate your students?
Fase 2 Experiences
The participants talk about experiences involving motivation and can choose with whom they talk, which content to talk about, and if and how to capture the information.

Fase 3 Structuring
Student teachers, talk about their experiences in the minor, explain what motivated them and discuss the experiences of the participants.

Fase 4 Theory
Which principles and theory is used with good examples how to achieve ABC&T.

Fase 5 Focusing
Participants can choose how they want to zoom in into the theory and transfer that to their own practice, in groups or more individually, with or without the help of a schedule. The lecturers will provide the necessary guidance for a competent feeling.

Interesting & expectation
All kind of educators who teach students gain knowledge and experience about motivational interventions by experiencing them themselves.
The participants who enter want to learn about how to motivate their students in an interactive way. They are focused on issues such as: 'How do I motivate my students', and 'How do I want to motivate them'.

Learning gains
Insights in principles to achieve ABC & T. With the theoretical background and using the necessary tools participants may achieve intrinsic motivation in their own practice.

Relevance
By having more knowledge about how to achieve motivation with students, teachers will develop from good teachers into the Best Teachers, as the theme of the ATEE suggests.

References
147 – Inter-disciplinary practical activities for the natural sciences: Using practical work to support big questions in science

Milan Stojkovic, Freie Gemeinschaftsschule Armin Mueller Stahl, Germany, Linda Hobbs, Deakin University, Australia, Laurinda Leite, University of Minho, Portugal

RDC: Science and Mathematics Education
Subtheme: School-based teacher education

Abstract
Theoretical positioning and rationale
Globally, there is a downturn in student interest in undertaking senior level school sciences and as a chosen career path (Marginson, et al, 2014). The quality of science teaching and the focus of the curriculum come into question when students report that their experience of school science is largely theoretical and of little interest and too abstract for application to their daily lives (Woest, 1997). In fact, Beaver (1999) showed that students can leave practical classes feeling more confused than when they arrived.

The use of practical knowledge from the natural sciences is of great importance in everyday life and work (Science Education for Responsible Citizenship, 2015). The agenda around Science-Technology-Engineering-Mathematics (STEM) provides an opportunity for mathematics, science and technology educators to draw real-world problems into the classroom, and is one way educators in some countries are attempting to raise students' interest and engagement with science and mathematics (STEM Education, n. d.). There is a need for science and mathematics educators internationally to design practical activities that can support exploration of these real-world problems and contexts.

Further, the natural sciences can tend to be taught as discrete topics that are discipline based. This simplification and uniformity of teaching content enables deep exploration of the disciplinary concepts through discipline-specific practical activities (Dillon, 2008; Millar, 2009).

In order to represent the tendency for scientists to work in multi-disciplinary teams and highlight the relevance of science and mathematics to everyday life, there is a need to design practical activities that incorporate concepts and practices from a number of disciplines.

The Workshop audience, aims, structure and requirements
The main aim of this workshop is to provide an approach to teaching the natural sciences that is inclusive of the scientific disciplines. There are three key learning gains expected for participants:(1) Activities are selected around themes that include opportunity for exploration of concepts and phenomena that can be aligned with multiple disciplinary practices and ideas.(2) Practical work is a common feature of science classrooms internationally, doing it well requires an appreciation of the need for explicit connection of the scientific and mathematical concepts to the activity.(3) The workshop will further explore how such practical activities can be used within broader inquiries into real-world problems.

This workshop consists of three parts. In the first part of the workshop, we will provide a theoretical basis for how to use practical work inclusive of a range of disciplines. In the second part, the participants will undertake experiments and consider their application within broader contexts and science and mathematics curriculum.

The third part of the workshop will involve roundtable discussions of:• the value of using practical work generally;• the use of practical work to support the development inter-disciplinary knowledge and skills;• how to increase the learning gain of students from practical work;• propose further
contexts and real-world problems that might be inclusive of a range of disciplines and the practical work that might support the learning.

Link to ATEE DRCThis workshop is the outcome of work carried out by members of the Science and Mathematics Education RDC into practical work and STEM education that explores disciplinary practices that occur across and at the boundary spaces between the STEM subjects, in particular mathematic and science, as well as boundary spaces between the science disciplines of biology, chemistry and physics.

The main idea of ATEE-RDC Science and Mathematics Education is to highlight the importance of an overall teaching of the natural sciences that emphasises creative, innovative, and stimulating modern teaching that is responsive to the needs of a twenty-first century education.

References
172 – Selecting prospective students: Can shaky legs still produce a stable stool?

Piet Murre, Gerrit Beunk, Driestar University, the Netherlands

RDC: Secondary Teacher Education
Subtheme: Innovation

Predictive validity / prospective students / selection

Abstract
Educating the best teachers starts with ascertaining that only the most promising prospective teachers enrol in teacher education courses. Whilst this may prove to be an impossible challenge, a recent Dutch law created opportunities to attract better and better prepared students in secondary teacher education. It is important to use these possibilities to provide more effective and more efficient education, in order to prevent squandering precious lives or resources.

The aims of this workshop are to share the development and set-up of an innovative selection procedure for prospective teacher trainees before the commencement of their studies, how this procedure relates to recent research, its effectiveness in terms of subsequent study success, and to discuss together some of the key dilemmas, including ethical dimensions inherent in the procedure. The workshop familiarises the participants with the development of a selection procedure for prospective secondary students of a small Dutch teacher education university. Establishing such a procedure was made possible by a recent Dutch law, Kwaliteit in verscheidenheid ('Quality in diversity', 2013). While teacher educators combined their experience to design a full day selection procedure, consisting of both an activating informative part and a battery of tests, it was deemed necessary to study the effectiveness and predictive validity of the procedure.

This was done in two ways. First, by comparing it to review studies on selection procedures for future teachers that became available shortly afterwards (Snoek, Sengers, Van Setten, Van der Rijst & Van Driel, 2014; Van der Rijst, Tigelaar, Van Driel, Snoek & Van Verseveld, 2014). A key conclusion of these studies is the necessity of multidimensionality of any defensible procedure. This is in accordance with the procedure we developed. Second, the predictive validity was measured by charting the study career of the students of the 2014 and 2015 cohorts, including later drop-outs, versus the initial advice given at the end of the procedure. The findings so far suggest that the procedure as a whole seems to have a reasonable predictive validity, with the caveat that numbers are small.

Nevertheless, there are a number of ethical issues. Prospective students need to receive a justifiable and adequate advice whether their study career is likely to be successful or not. A well-founded positive personalised advice may also encourage prospective students as it provides clearer expectations (cf. Bain, 2004; Hattie, 2009). However, some of the tests seem to lack proper justification or concurrent validity. Furthermore, there is no meta standard to decide how to weigh up contradictory indications between tests.
In the workshop, a brief introduction will acquaint participants with the particulars of the selection procedure. Then a sample of sentences with concrete feedback, which are always added to the advice offered, will be discussed in small groups, with regard to multidimensionality and justification. The insights will then be collected. Finally, this will lead to a discussion of a small number of either-or statements concerning ethical dimensions which are integral to the procedure and the advice given to prospective trainee teachers. The classroom will be divided into three parts, and arguments will be shared with liked-minded people and confronted with those who support the opposite position a in procedure reminiscent of a parliamentary debate.

The workshop may provide new insights to delegates who want to combine innovation originating on the shop floor with empirical research, to those interested in selection procedures, and to those who are interested in the moral dimensions of teacher education. No prior experience with selection procedures is necessary, although a sensitivity for the many diverging factors and their ramifications may enrich the discussion of the themes of the workshop.

References
Snoek, M., Sengers, F., Van Setten G. J., Van der Rijst, R., & Van Driel, J. (2014). Verkenning naar de wenselijkheid en mogelijkheid van selectie op geschiktheid voor het beroep van leraar en van verzwaring van vakinhoudelijke eisen voor de tweedegraads lerarenopleidingen. (A survey (reconnaissance) of the desirability and possibility of selection on aptitude for the teaching profession, as well as a heightening of requirements with regard to subject or discipline) Amsterdam/Leiden: Hogeschool van Amsterdam en Universiteit Leiden.
209 – Do-It-Yourself in teaching practice
Miroslava Cernochova, Tomas Jerabek, Petra Vankova, Charles University of Prague, Czech Republic

RDC: Teacher Education and Digital Technology
Subtheme: Innovation

Digital / do-it-yourself

Abstract
The main aim of the workshop is to introduce the concept of DIYLab, and to present some of the outcomes of the EU project DIYLab (Do It Yourself in Education: Expanding digital competence to foster student agency and collaborative learning, 543177-LLP-1-2013-1-ES-KA3-KA3MP) including some examples of the DIYLab activities published on DIYLab HUB. The workshop participants will try to design their own DIYLab activity which could be accomplished with their students at school. A completed design of a DIYLab activity developed as a problem-based assignment, in accordance with the DIYLab philosophy and DIYLab criteria, will be a result of the workshop. The designed DIYLab activity should contribute to digital literacy development. It should be based on collaborative work by the students, who should apply knowledge and skills from different subjects and branches in its solution. In this way, the DIYLab activity should develop interdisciplinary relations. Developing a DIYLab activity into the school environment is a challenge. The aim is to support autonomous and self-directed learning, and to import new ideas and students' experiences into curriculum, skills mastered by students out of school in their after-school activities. The DIYLab activity should be interesting and attractive for students and their teachers, too. It is expected that, in dealing with it, students will engage with the same level of interest and enthusiasm as is case when they are occupied by their hobby as their after school spare-time activity, and thus they will learn new knowledge and acquire new skills. The DIYLab activity is a way to explore how not only students, but also their teachers can learn new things. Outcomes developed in the workshop will be presented and discussed together with workshop participants.

The workshop should be interesting not just for teachers and teacher educators who specialise in digital technology or computing education. It can be useful for all who would like to introduce into their teacher education some innovative approaches to learning as a process.

References
Web: DIYLab. http://diylab.eu
Mobile Technologies: A wake-up call for teacher education?

Paul Hopkins, Kevin Burden, University of Hull, United Kingdom

RDC: Teacher Education and Digital Technology
Subtheme: School-based teacher education

Competencies / mobiles / teacher standards

Abstract
Tablet devices have made a huge impact in schools, in fewer than six years tablet devices have proliferated and in 2015 they were predicted to outsell PCs (Gartner, 2014). 70% of UK schools are estimated to be using tablets (BBC, online) and across Europe, ‘laptops, tablets and net-books are becoming pervasive’ (EU schoolnet, 2014). As these devices become established in schools they both support and develop existing practice (Burden and Hopkins et al, 2011; Baran, 2014) but are also starting to challenge some existing models of thinking and pedagogy (Fullan and Langworth, 2014; Kearney et al, 2012) and also teachers’ attitudes towards learning and teaching (Ertmer, 1999; Hopkins & Burden, 2015). Offering opportunities for learning to become more authentic, personal and collaborative (Kearney et al, 2012) there are opportunities for teachers to start to redesign the ways in which learning is taking place (Puente, 2010; McCormick, 2001). Traxler defines mobile learning as ‘an educational process, in which handheld devices or palmtops are the only or dominant used technology tools’ (2007:2) and Kearney (2012) argue that it has the potential to revolutionise the learning process in allowing individuals to determine their own independent paradigms and frameworks of learning. These devices are also sophisticated producers of digital artefacts and children and teachers are capable of being co-producers of learning materials.

What is impact for teacher education of the increased use of mobile and tablet devices in classrooms? Does increased use mean a change in the ways we should frame teacher education building on models of ‘knowledges’ for teachers? (Shulman, 1986; Mishra & Khoeler, 2009) What are the content skills pre-service teacher (PSTs) need? What are the pedagogic skills that PSTs need? What are the challenges to existing models of L&T?

This is a wake up call for teacher education and for teacher educators as it likely that the significant majority of those currently preparing teachers to enter this new device enable workplace have little, or no experience, in using these devices with school aged children and are ‘digital immigrants’ (Prensky, 2001) or ‘digital visitors’ (White and Le Cornu, 2011) rather than more sophisticated personal users of the technologies. They are also less likely to be digital producers of materials suitable for use on tablet devices (i.e. apps or e-books) (Felvegi & Matthew, 2012; Glakin et al 2014). As Dewey said in 1916, 'If we teach today as we taught yesterday, we rob our children of tomorrow' We would like to run an interactive workshop to consider what the needs are for teachers in this more digital and mobile teaching environment - what are the ‘digital competencies’ of the teacher who will be teaching in the device enabled classroom - are these different from the existing teaching competencies? Exploring the three questions above through both theoretical and practical lenses we would hope to develop a rough set of teacher competencies by the end of the workshop that could be developed further post the conference.
We will use a 'world café' approach to the interactive workshop where three tables, each with a facilitator to structure the debate and discussion. After a short (15min) introduction there would be three sessions of 20 mins where attendees would be split into three groups each of whom would look at teaching competencies through one of the question lenses. After each 20mins the groups would rotate and look to peer-review and develop each of the statement sets. The final 15 mins would aim to summarize the activity in order to look for ways to develop - mobile technology use will be modelled during the workshop.

References
Blacken et al (2014) Assessing the Impact of eBooks and Mobile Devices on Student Learning, Social Work Faculty Publications and Presentations, Boise State University
Traxler, J. (2007). Defining, discussing, and evaluating mobile learning: The moving finger writes and having writ... International Review of Research in Open and Distance Learning, 8(2), 112
8 – Expansive practice in the practicum experience in teacher preparation

Rosalyn Hyde, University of Southampton, United Kingdom

RDC: Secondary Teacher Education
Subtheme: School-based teacher education

Practicum / secondary teacher preparation

Abstract
Recent policy change in England has seen a large-scale move away from university-led post-graduate teacher preparation towards provision through school-led routes. In these new routes, schools take the lead in providing teacher preparation with a great deal of the pre-service teacher’s time being spent in the school environment. Many of these programmes are managed in collaboration with a university and will lead to both the award of Qualified Teacher Status (for teaching in England) and the academic award of Post Graduate Certificate of Education (PGCE). Some of these programmes are ‘salaried’ where the pre-service teacher is employed as an unqualified teacher during their teacher preparation and some are almost entirely based in schools with little university input. As teacher preparation in England becomes increasingly school-led and school-based there are major questions to be asked about the role of the university and the role of the workplace (i.e. the school), and the relationship between them.

School-led routes in England were introduced as an apprenticeship approach to teacher preparation (Gove 2010) where pre-service teachers ‘learn on the job' through ‘hands on training' (Department for Education 2014). Such models make the practicum the main vehicle of learning for pre-service teachers and promote both ‘craft worker’ and ‘executive technician' approaches to teaching at the expense of an understanding of the teacher as a professional (Winch et al. 2013). However, what is less clear is how well school-led models of teacher preparation fit with current research on effective apprenticeship learning and also the degree to which apprenticeship is a good model for teacher preparation. Fuller & Unwin’s (2008) model of expansive and restrictive apprenticeship, along with Hodkinson & Hodkinson's (2005) work on expansive learning environments for practising teachers, offer perspectives for considering how the practicum can lead to effective learning in teacher preparation.

The work discussed here is part of a larger study investigating professional learning on school-led teacher preparation programmes for secondary school teaching. My work thus far on this part of the project has been to adapt Fuller & Unwin’s (2008) expansive and restrictive continuum to apply it to teacher preparation. Qualitative techniques have identified that the adapted continuum reflects aspects of teacher preparation and provides a set of conditions of high quality learning for practicum experience, but that apprenticeship provides an incomplete model for teacher preparation. In particular, there is insufficient recognition of the content knowledge and pedagogical content knowledge needed for secondary school teaching. The adapted continuum has been modified further using Hodkinson & Hodkinson's (2005) work and it is this iteration of the expansive framework form the focus for this session.

In particular, participants in the roundtable discussion are invited to consider the extent to which apprenticeship offers a good model for secondary school teacher preparation and the features of high quality workplace learning that need to be present for deep and effective learning in the school
environment and the practicum. To aid the discussion, participants will consider some vignettes of the kinds of experiences English pre-service teachers have when undertaking teacher preparation, reflecting the range of approaches to teacher learning identified by Winch et al. (2013).

Discussion will focus on the following questions:
- Does ‘expansive’ practice offer a useful framework for practicum learning in teacher preparation?
- Are there aspects of teacher preparation absent when teacher preparation is based in the workplace and through practicum?
- What adaptations can be made to the practicum to better provide for pre-service teachers developing an understanding of the teacher as a professional?

References
48 – Changing roles: teaching divers(ity)

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RDC: Education for Social Justice, Equity and Diversity
Subtheme: Professional roles of teacher educators

Diversity in classroom / professionalization / team

Abstract
How can we, as teacher educators, gain a deeper insight in dealing with diversity in the classroom? Are the conceptual frames we teach our students sufficient to ‘get the job done’? Which actions can improve or own way of teaching divers? These and more likewise questions were raised by our team and have led to a new project: ‘changing roles: teaching superdivers(ity)

The project aims to professionalize all teacher trainers in dealing with a super divers classroom or audience. Each teacher trainer will conduct 5 different types of activities over a period of 5 years. All activities aim to widen the scope and build experience in teaching divers(ity). The list of activities include: teaching a super divers high school class, visit schools which function as a best practice, interview staff members of organizations dealing with super diversity, write and publish an article about the topic, ...

Due to these activities the personal concept about super diversity and teaching in a super divers setting will be widened. The hypotheses is put forward that when our trainers are more experienced in and confident with this topic, they will share their experiences with our students who, in their turn, will try to teach with more awareness of diversity.

The first year of our project ends in august. Some new questions emerge:
- Does every teacher trainer need to conduct all 5 activities?
- Is a five year involvement to long?
- How can we measure the degree of change in personal concepts?
- How can we realize a (more) structured transfer between these experiences and the curriculum of our students?
191 – Teacher Educators' Perception of Their Professional Roles and Its relation to Professional Identity: Perspectives from Turkey

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RDC: Professional Development of Teacher Educators
Subtheme: Professional roles of teacher educators

Professional identity / teacher educators / teacher roles

Abstract

Background of the research
Working in the profession for several years, I realize that I have various roles, responsibilities and formed an identity as a teacher educator. How and to what extend these roles, responsibilities and my professional identity effect me in my personal life and perform my job are still uncertain for me. I believe that many teacher educators would share the similar thought with me.

There are many researches done on teacher educators' professional roles around the world; and by analyzing these studies, Lunenberg, Dengerink and Korthagen (2004) describes six roles for teacher educators: Teacher of teachers, researcher, coach, gatekeeper, and broker. On the other hand, Lunenberg (2015) points out the scarcity of research on the teacher educators' identity. She suggests that teacher educators' professional development should be supported nationally and locally and more researches are needed to be done to do so.

An extensive literature review revealed that there is limited research done on roles and identity of teacher educators in the Turkish context. One study (Gokmenoglu, Beyazova & Kilicoglu, 2015) focused on teacher educators' professional development and their role as learners. In this study 14 teacher educators are interviewed in one of the universities in North Cyprus where mostly Turkish citizens reside and Turkish students studies. In this research it is found that participants perceive that role of professional development - and their learning - starts after they enter the profession and believe that it should last lifelong thereafter.

Theoretical framework
Roles and identity of teacher educators may vary due to and be affected by various factors such as culture, educational systems, positions, and employers. This study will examine roles of teachers and their relation to professional identity from a Turkish perspective. Therefore, a socio-cultural view fits and will be employed as the theoretical framework.

Research aim/question
Aim of this research is to study teacher educators' perception of their roles and how these roles are related to their professional identity. Under this aim, the following questions will be thoroughly examined.

- How do teacher educators perceive their roles?
- How do teacher educators relate their roles to their professional identity?
- What are the factors that affect teacher educators roles?
Research methodology
Video-stimulated recall interviews (Cherrington ve Loveridge, 2014; O’Brien, 1993; Morgan, 2007; Rowe, 2009) will be utilized in this study. In this method, there are two stages: In the first phase, teacher educators will be interviewed about their professional roles and these interviews will be video recorded. After recordings are finalized, they will be edited for shorter views by researchers. In the second phase, edited recordings will be used as a part of the second round of interviews to examine participants views regarding these roles and their relation to professional identity. Five teacher educators from different subjects (teacher education programs in elementary math, elementary social sciences, early childhood, secondary physics and computer education and instructional technology) will be interviewed. Following the analysis of data, participants will be shown the analysis to eliminate any misinterpretations.

Relevance to European educational research and conference theme
The aim of this study is relevant to the following conference subtheme: ‘Professional roles of teacher educators: Teacher educators fulfill a lot of different roles. Do teacher educators recognize these roles and how do they value them?’
36 – Teacher educators share stories of innovation through collaborative discussion and writing. Interrogating the process and seeking critical conversations.

Doreen Rorrison, Charles Sturt/Adelaide Universities, Australia, Jean Kriewaldt, University of Melbourne, Australia, Angelina Ambrosetti, Central Queensland University, Australia, Ros Capeness, Queensland College of Teachers, Australia

RDC: Professional Development of Teacher Educators
Subtheme: School-based teacher education

Innovation / professional experience

Abstract
Through presenting the framework of an edited volume focussing on current innovations in professional experience (practicum) in teacher education this round table discussion will focus on achievements possible through collaboration. Participants should have an interest in the school based component of teacher education, from either a policy, mentoring, assessing, planning, research, scholarship or facilitating position. Tentative findings, chapters and themes arising from the project will be presented for discussion and critique. Participants will be invited to remain involved in a 'community of practice'.

Professional experience (the practicum) in teacher education has recently been dominated by increasing expectation and documentation associated with the quality teacher agenda, resulting in a myriad of policy directives and accountabilities. To purposefully contest this, a group of four Teacher Educators invited colleagues from each of the 36 Australian Universities to submit short stories of professional experience that demonstrate innovative programs meeting the needs of the local context. Thirty Australian scholars working in the field of practicum were selected to share, compare and interrogate their experiences at a working conference, arriving at the conference having prepared a brief structured narrative and already thinking about how they might work with colleagues to inform the field of their innovation. Groupings had been established through emergent themes from the pre-submitted stories and final working collaborations were aided by some direction from keynote speakers. After only two days of group discussion delegates made a decision to submit a proposal to a publisher for an edited volume focussing on changes and innovations in professional experience in Australia and informed by those working at the coal-face.

The themes that are emerging from the 20 chapter abstracts being currently considered position professional experience as a highly contested field with many challenges. Practical and conceptual frameworks for school-university partnerships, for approaches to mentoring and the centrality of enabling conversations are explored.

It is our intention to make a contribution to the field through describing the research and empirical projects in a range of settings and through collaborative investigations and critique uncovering new findings and sharing emergent themes.
Once abstracts have been accepted by the editors, writers will have until mid-July to submit their collective work. Judging by current discussions some chapters will be submitted well before the deadline and editors will begin the process of review by national and international experts immediately. By late August participant in the workshop will be offered a preview of the volume structure, and drafts of some reviewed chapters. Responses to our three questions will be used to help steer the process over the following few months. An open review process for the chapters is important to us, especially in a professional and international setting.

The first question to be presented for discussion will be related to description of the innovations. Do the participants recognise the stories and finding we present? The second question will be related to process. How can collaborative cross-institutional approaches to research strengthen the impact and reach of the findings? Finally we will ask participants to comment on the key ideas that are emerging from the edited volume. Why is this happening? What should our responses be? Currently concepts of dialogue, new spaces, partnerships, innovation, and context are highlighted.

The focus of the conference is on the important task of teacher education to educate the best teachers, and this is also a central focus of this interactive round table. While innovative practice is also a theme, our purpose connects best with sub-theme three; 'school-based teacher educatio