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Information for the March 21, 2014 TeachingWorks Journal Club Meeting

We will discuss the following two articles in this meeting:
1. König, J., Blömeke, S., Klein, P., Suhl, U., Busse, A., & Kaiser, G. (2014). Is teachers' general pedagogical knowledge a premise for noticing and interpreting classroom situations? A video-based assessment approach. *Teaching and Teacher Education*, *38*, 76–88.

2. **König, J., Blomeke, S., Paine, L., Schmidt, W. H., & Hsieh, F.-J. (2011). General pedagogical knowledge of future middle school teachers: On the complex ecology of teacher education in the United States, Germany, and Taiwan.** *Journal of Teacher Education*, *62*(2), 188–201.

In addition, bibliographic information is below for other relevant articles published in the following journals since the December 15, 2013 meeting and until February 1, 2014.[1]

Journal of Teacher Education
American Educational Research Journal
Elementary School Journal
Journal of Curriculum Studies
Teachers College Record
Educational Evaluation and Policy Analysis
Teaching and Teacher Education
Journal of Education for Teaching: International Research and Pedagogy

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Arya, P., Christ, T., and M.M. Chiu (2014). "Facilitation and teacher behaviors: An analysis of literacy teachers' video-case discussions." Journal of Teacher Education 65(2): 111-127.
> This study explored how peer and professor facilitations are related to teachers' behaviors during video-case discussions. Fourteen in-service teachers produced 1,787 turns of conversation during 12 video-case discussions that were video-recorded, transcribed, coded, and analyzed with statistical discourse analysis. Professor facilitations (sharing experiences; affirming ideas; and asking for critical thinking, information, observations, and connections) and peer facilitations (recall, critical thinking, connections, and affirmations) in recent conversation turns were linked to teachers' current turn behaviors, including recalling information, critical thinking, and making connections to content in video cases. These results suggest that modeling, scaffolding, and co-construction among professors and peers support specific teacher behaviors during video-case discussions.

Boulton, M. J., Hardcastle, K., Down, J., Fowles, J., and J.A. Simmonds (2014). "A comparison of preservice teachers' responses to cyber versus traditional bullying scenarios: Similarities and differences and implications for practice." Journal of Teacher Education 65(2): 145-155.
> Prior studies indicate that teachers differ in how they respond to different kinds of traditional bullying, and that their beliefs predict their intervention intentions. The current study provided the first extension of this work into the realm of cyber bullying. Preservice teachers in the United Kingdom (N = 222) were presented with vignettes describing three subtypes of traditional bullying as well as cyber bullying, and the latter was directly compared with the former. Dependent variables were perceived seriousness, ability to cope, empathy, and intentions to intervene.

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[1] For the March 21, 2014, TeachingWorks journal club we considered the following journals:
Journal of Teacher Education (January/February 2014, *65*(1); *March/April 2014* *65*(2)); *American Educational Research Journal (no new issues since December 2013); Elementary School Journal (no new issues since December 2013); Journal of Curriculum Studies (2014,* *46*(1); 2014 *46*(2)); Teachers College Record (**116**(1),* *116*(2)); Educational Evaluation and Policy Analysis (March 2014,* *36*(1)); *Teaching and Teacher Education (February 2014,* *38*); Journal of Education for Teaching: International Research and Pedagogy (2014,* *40*(1); 2014,* *40*(2)).

Results showed that responses to cyber bullying were most similar to verbal traditional bullying, but distinct from physical and relational traditional bullying. For cyber bullying, willingness to intervene was significantly predicted from the other three dependent variables (collectively and each one uniquely). No gender differences were observed. The implications of the results concerning how teacher educators could help teachers to deal with cyber bullying were discussed.

Cheatham, G. A., Jimenez-Silva, M., Wodrich, D.L., and M. Kasai (2014). "Disclosure of information about English proficiency: Preservice teachers' presumptions about English language learners." Journal of Teacher Education **65(1): 53-62.**

The purpose of this analog study was to determine if increased access to information about a hypothetical English Language Learner (ELL) students' language proficiency increased preservice teachers' recognition that limited English proficiency is the likely cause of student difficulties. We find that the provision of increasing levels of information about the student's English proficiency was associated with preservice teachers' recognition that limited English proficiency was the likely cause of the student's classroom difficulties. We also find no differences between groups based on preservice teachers' education major. This study has implications for avoiding inappropriate referrals for special education evaluation and appropriately meeting ELL students' instructional needs.

Desimone, L. M., Hochberg, E.D., Porter, A.C., Polikoff, M.S., Schwartz, R., and L.J. Johnson (2014). "Formal and informal mentoring: Complementary, compensatory, or consistent?" Journal of Teacher Education **65(2): 88-110.**

Informal mentors likely play a substantial role in novice teacher learning, yet we know little about them, especially in relation to formal mentoring, which is the cornerstone to most induction programs. This study analyzes survey and interview data from 57 first-year mathematics teachers from 11 districts to investigate differences in the characteristics of formal and informal mentoring that can inform improvements in mentoring policy. Our findings suggest that informal and formal mentors sometimes serve similar functions but often provide compensatory and complementary support. Based on these findings, we identify a set of policy recommendations to improve new teacher supports.

Fuller, E. J. (2014). "Shaky methods, shaky motives: A critique of the National Council of Teacher Quality's review of teacher preparation programs." Journal of Teacher Education **65(1): 63-77.**

The National Council on Teacher Quality's (NCTQ) recent review of university-based teacher preparation programs concluded the vast majority of such programs were inadequately preparing the nation's teachers. The study, however, has a number of serious flaws that include narrow focus on inputs, lack of a strong research base, missing standards, omitted research, incorrect application of research findings, poor methodology, exclusion of alternative certification programs, failure to conduct member checks, and failure to use existing evidence to validate the report's rankings. All of these issues render the NCTQ report less than useful in efforts to understand and improve teacher preparation programs in the United States. The article also suggests alternative pathways NCTQ could have undertaken to work with programs to actually improve teacher preparation. The article concludes by noting that the shaky methods used by NCTQ suggest shaky motives such that the true motives of NCTQ for producing the report must be questioned.

Gan, Z. (2014). "Learning from interpersonal interactions during the practicum: A case study of non-native ESL student teachers." Journal of Education for Teaching **40(2): 128-139.**

Although research reveals that pre-service student teachers often regard their relationships with their significant others as an important element of their initial teaching practice experience, much remains unknown about the influence of significant others on non-native English as a Second Language (ESL) student teachers' professional learning process during field experiences. This paper presents the findings of a qualitative study of the professional learning experiences of 17 pre-service non-native ESL student teachers during an eight-week-long practicum. Grounded in a sociocultural view of teacher learning, the study explores how the ESL student teachers developed their understanding of professional learning in the light of their experiences of

engaging with their supporting teachers, supervisors, other school staff members as well as peer student teachers during the practicum. Analysis of the data reveals that these people assumed the role of coach either directly or indirectly, having a positive influence on the student teachers' role as a teacher. Analysis of the data also reveals negative interactions between student teachers and their significant others, which sociocultural theories have so far not taken sufficiently into account. While findings of this study challenge past assumptions about where knowledge for teaching comes from and how it can be learned, this study also suggests an urgent need to consolidate university-school partnerships to foster student teachers' adaptation to the context of teaching practice and maximise their professional learning opportunities.

Gelfuso, A. and D. V. Dennis (2014). "Getting reflection off the page: The challenges of developing support structures for pre-service teacher reflection." <u>Teaching and Teacher Education</u> **38: 1-11.**

Recent international calls in teacher education include increased quantity and quality of field experiences for pre-service teachers (IALEI, 2008; NCATE, 2010). Despite increased attention to the quality of field experiences, there remains "much disagreement about the conditions for teacher learning that must exist for this learning in and from practice to be educative and enduring" (Zeichner, 2010, p. 91). In this formative experiment study (Reinking & Bradley, 2008), we use Dewey's (1933) ideas about judgment, analysis/synthesis, and balance to explore reflection as a communal process which results in "warranted assertabilities" (Dewey, 1986, p. 15) about teaching and learning. Findings show the presence of knowledgeable others helped to focus the conversations on teaching and learning but that reflection, as conceived of by Dewey, did not occur. Therefore, additional inquiry is needed into the facilitation of the process of reflection.

Ginsberg, R. and N. Kingston (2014). "Caught in a vise: The challenges facing teacher preparation in an era of accountability." <u>Teachers College Record</u> **116(1).**

Background: Despite polling data that suggests that teachers are well respected by the general public, criticism of teacher preparation by various organizations and interest groups is common, often highlighting the perceived need for increasing their rigor and performance. A number of studies and reports have critiqued teacher preparation, and high-profile leaders like Secretary of Education Arne Duncan have called for substantive changes. At the same time, the field of teacher preparation has been embracing change with the idea of accountability based on student performance. Indeed, recently released evidence suggests that in the area of clinical preparation, education programs require many hours of field placement experiences, countering one of the key criticisms of the preparation programs.

Purpose: The purpose of this study is to examine the field of teacher preparation in the current era of accountability and testing. After a brief overview of the current context facing teacher preparation, the issue of outcome measures for varying professions is explored by comparing accreditation outcome measures utilized in selected professions. Then, the strengths and weaknesses of currently emerging assessment models are explored. Finally, a discussion of potential ways to assess teacher preparation program performance with an array of sources and measures is presented.

Research Design: The study is a combination of a secondary analysis and analytic essay. The use of outcomes associated with 10 professions was examined by reviewing accreditation standards and documentation from published reports available on websites for the specific measures used to assess student success and program outcomes. As a means of validating findings, feedback was obtained from accreditation coordinators and/or other leaders in each profession. The analysis of currently emerging assessment models for teacher preparation was based upon a review of literature on value added and other similar assessments.

Conclusions/Recommendations: The review of professions found that all are struggling with better means for assessing program outcomes, with a great deal of similarity in the processes currently in place used across fields. Teacher education was found to include more of the different ways for assessing outcomes than any other profession. Significant concerns with currently promoted value-added models for assessing outcomes of teacher preparation were identified, with the use of multiple measures of evidence suggested as the best means for moving forward. We argue that teacher preparation programs are caught in a vise—with an appreciation

and desire among those in the field for greater accountability while being squeezed by a sense that the approaches being suggested are prone to error and misuse.

Henry, G. T., Purtell, K.M., Bastian, K.C., Fortner, C.K., Thompson, C.L., Campbell, S.L., and K.M. Patterson (2014). "The effects of teacher entry portals on student achievement." Journal of Teacher Education 65(1): 7-23.

> The current teacher workforce is younger, less experienced, more likely to turnover, and more diverse in preparation experiences than the workforce of two decades ago. Research shows that inexperienced teachers are less effective, but we know little about the effectiveness of teachers with different types of preparation. In this study, we classify North Carolina public school teachers into portals—fixed and mutually exclusive categories that capture teachers' formal preparation and qualifications upon first entering the profession—and estimate the adjusted average test score gains of students taught by teachers from each portal. Compared with undergraduate-prepared teachers from in-state public universities, (a) out-of-state undergraduate-prepared teachers are less effective in elementary grades and high school, (b) alternative entry teachers are less effective in high school, and (c) Teach For America corps members are more effective in STEM subjects and secondary grades.

Hökkä, P. and A. Eteläpelto (2014). "Seeking new perspectives on the development of teacher education: A study of the Finnish context." Journal of Teacher Education 65(1): 39-52.

> Studies show that changes in teacher education around the world occur slowly and are difficult to implement. This study aims to contribute to the discussion on the major resources for and obstacles to developing teacher education and finding novel solutions to overcome the obstacles. Resources and obstacles were investigated in the context of academic and university-based teacher education in Finland. Findings revealed three major challenges: (a) obstacles in renegotiating professional identity, (b) internal competition between subject-matter groups within the department, and (c) discrepancies between individual agency and organizational development. Based on the findings, this study argues that teacher educators' individual and collective agency must be supported to enhance their continuous professional learning and organizational change. This goal can be achieved by developing teacher education concurrently at multiple levels, including the individual, work community, and organizational levels. In addition, there is a need to construct multiple couplings between these levels.

Jungert, T. (2014). "Motives for becoming a teacher and their relations to academic engagement and dropout among student teachers." Journal of Education for Teaching 40(2): 173-185.

> Difficulties in attracting student teachers have resulted in research focusing on student teachers? motives for studying to join the profession. Because previous findings are mixed, the first aim of this study was to explore motives for students to become teachers. A second aim was to explore the relationship between teachers' motives and their academic engagement and dropout rates at the end of their studies. A sample of 333 student teachers at a Swedish university completed a questionnaire measuring motives for becoming a teacher and their academic engagement. The best model of a confirmatory factor analyses defined three motivational factors as altruistic, intrinsic and extrinsic motives. A path analysis showed a negative significant relationship between the altruistic motive and dropout, mediated by academic engagement, whereas the relationships between intrinsic and extrinsic motives and academic engagement were not significant.

König, J., Blömeke, S., Klein, P., Suhl, U., Busse, A., and G. Kaiser (2014). "Is teachers' general pedagogical knowledge a premise for noticing and interpreting classroom situations? A video-based assessment approach." Teaching and Teacher Education 38: 76-88.

> We examine how the declarative-conceptual general pedagogical knowledge (GPK) assessed via a paper-and-pencil test can be understood as a premise for early career teachers' ability to notice and interpret classroom situations assessed via video-vignettes. Longitudinal data from TEDS-M conducted in 2008 at the end of teacher education and a follow-up study in Germany in 2012 is used. Teachers' skills to notice and interpret differ. Interpreting correlates with the current level of GPK, whereas noticing does not. GPK at the end of teacher education neither predicts noticing

nor interpreting, which suggests teachers' cognitions are reorganized during the transition into teaching.

Lee, K.-T., Chalmers, C., Chandra, V., Yeh, A., and R. Nason (2014). "Retooling Asian-Pacific teachers to promote creativity, innovation and problem solving in science classrooms." <u>Journal of Education for Teaching</u> **40(1): 47-64.**

> This paper reports on a Professional Learning Programme undertaken by primary school teachers in China that aimed to facilitate the development of "adaptive expertise" in using technology to facilitate innovative science teaching and learning such as that envisaged by the Chinese Ministry of Education's (2010/2020) education reforms. The study found that the participants made substantial progress towards the development of adaptive expertise manifested not only by advances in the participants' repertoires of pedagogical content knowledge but also in changes to their levels of confidence and identities as teachers. By the end of the programme, the participants had coalesced into a professional learning community that readily engaged in the sharing, peer review, reuse and adaption, and collaborative design of innovative science learning and assessment activities. The findings from the study indicate that those engaged in the development of Professional Learning Programmes in Asia-Pacific nations need to take cognizance of certain cultural factors and traditions idiosyncratic to the educational systems. This is reflected in the amended set of principles to inform the design and implementation of professional learning programmes presented in the concluding sections of the paper.

Lillvist, A., Sandberg, A., Sheridan, S., and P. Williams (2014). "Preschool teacher competence viewed from the perspective of students in early childhood teacher education." <u>Journal of Education for Teaching</u> **40(1): 3-19.**

> This paper examines contemporary issues in early childhood teacher education in Sweden. The aim of the study was to explore dimensions of the construct of preschool teachers' competence as reported by 810 students enrolled in early childhood teacher education at 15 Swedish universities. The results showed that students' definitions of preschool teacher competence were composed of six different dimensions: a general pedagogical competence, specific content competence, distinct teacher competence, play competence, competence of child perspective, and collaborative and social competence. In general, there were quite large variations in how students perceived the concept of preschool teacher competence and the extent to which they believed they developed these competences during the course of their education. The different dimensions of preschool teacher competence are discussed in relation to the content of the early childhood teacher education in Sweden, the curriculum for the preschool and the concept of professionalism in Early Childhood Education and Care.

Lincove, J. A., Osborne, C., Dillon, A., and N. Mills (2014). "The politics and statistics of value-added modeling for accountability of teacher preparation programs." <u>Journal of Teacher Education</u> **65(1): 24-38.**

> Despite questions about validity and reliability, the use of value-added estimation methods has moved beyond academic research into state accountability systems for teachers, schools, and teacher preparation programs (TPPs). Prior studies of value-added measurement for TPPs test the validity of researcher-designed models and find that measuring differences across programs is difficult. This study is the first to examine the reliability and usefulness of a value-added model for TPPs developed through a collaborative stakeholder process and mandated by state law for use in accountability. Based on the experience of developing a test-based metric for Texas TPPs, our results suggest that although value-added results are statistically robust, accountability status for individual programs is very sensitive to decisions about accountability criteria, the selection of teachers, and the selection of control variables.

Lowrie, T. (2014). "An educational practices framework: the potential for empowerment of the teaching profession." <u>Journal of Education for Teaching</u> **40(1): 34-46.**

> This paper outlines new educational policy initiatives that have been recently introduced to Australian schooling contexts and describes the challenges of providing rich and empowering

professional development opportunities for classroom teachers and educational leaders in an era of heightened accountability and change. A framework for large-scale professional learning is proposed; one that adopts a theoretical lens associated with practice architectures, situated within community- and individual-focused professional learning experiences. The theoretical component of the model has been utilised effectively in a number of countries, while the personalised learning component is drawn from an evidence-based project that established a national learning framework.

Mansfield, C. F. and S. E. Volet (2014). "Impact of structured group activities on pre-service teachers' beliefs about classroom motivation: an exploratory study." <u>Journal of Education for Teaching</u> 40(2): 155-172.

Pre-service teachers' beliefs about classroom motivation, and how these beliefs may be developed during initial teacher preparation, is a relatively new aspect of enquiry in the fields of motivation and teacher education. An empirical study, grounded in a social constructivist perspective, was designed to examine the impact of providing pre-service teachers with opportunities to develop their existing beliefs about classroom motivation in interaction with peers. Participants were 53 teacher education students who participated in three semi-structured small group seminars, involving guided reflection and collaborative activities. Data were collected through matched pre- and post-questionnaires, and a final individual interview. The findings show that pre-service teachers' initial beliefs about classroom motivation can be consolidated and expanded through engagement in semi-structured collaborative learning activities that induce in-depth reflection and examination of beliefs, and in authentic problem-solving situations that connect with theory. Implications for further research and teacher education are discussed.

Matsko, K. K. and K. Hammerness (2014). "Unpacking the "urban" in urban teacher education: Making a case for context-specific preparation." <u>Journal of Teacher Education</u> 65(2): 128-144.

The literature on preparing teachers for urban schools provides a rationale for helping candidates understand the particular cultures of students. However, research has not sufficiently "unpacked" features of the setting that programs can address; nor has it discussed how programs tailor teaching approaches to their specific contexts. Drawing from program descriptions, syllabi, and interviews, we describe the "context-specific" approach of the University of Chicago Urban Teacher Education Program that prepares teachers for Chicago Public Schools and ways that it helps candidates make meaning of that setting. We present a framework to show how the program defines and then teaches as content essential knowledge about a district and its children—including community and neighborhood histories, district curricula, and policies—that must inform teaching and learning. We include examples of context-specific teacher preparation that illustrate how candidates learn about particularities of Chicago Public Schools and apply this knowledge to develop context-specific understandings and practices.

Medwell, J. and D. Wray (2014). "Pre-service teachers undertaking classroom research: developing reflection and enquiry skills." <u>Journal of Education for Teaching</u> 40(1): 65-77.

This paper reports on the development of reflectiveness and research skills in eight pre-service teachers, through their participation in a funded research project to develop the handwriting of children with literacy problems. The project aimed to analyse the reflections of the trainee teachers participating in an authentic research study and to consider what this reflection on practice might offer to the education of teachers in the current UK training context. The context for the paper was a project which engaged pre-service trainee teachers in researching the proposition that automaticity in handwriting plays a role in facilitating composing processes and that the automaticity of early writers can be trained. Some outcomes of the project for pupils are reported. The focus in the present paper is, however, on the participating trainee teachers and the paper suggests that conducting research was a significant learning event for these pre-service teachers and that, through working together, they were able to analyse their development as researchers and their learning during the research process. At a time when the English government views teacher training as a method of school improvement and the effectiveness of training is measured through its immediate impact on pupil outcomes, this study offers an example of how shared research can offer positive learning outcomes for pupils, develop the

reflective thinking of pre-service teachers through researching a real problem, and develop links across a range of school and university settings.

Mehrotra, S., Chee, Y.S., and J.C. Ong (2014). "Narrating professional development trajectories in the context of the Statecraft X game-based learning curriculum." Teaching and Teacher Education 38: 12-21.

This article examines the professional development trajectories of two teachers who implemented the Statecraft X digital game-based learning curriculum. The research project's objective was to enhance teachers' capacities to enact game-based learning curricula. Teachers participated in guided reflective questioning after their dialogic sessions that generated narratives. The narratives reported here indicate that teachers' professional development experiences were influenced by their personal practical knowledge. These experiences had a powerful influence on them as developing professionals and in transforming their pedagogical practices. These findings have implications for teacher professional development with respect to game-based learning and teachers' readiness for 21st century classrooms.

Ponte, E. and S. Twomey (2014). "Veteran teachers mentoring in training: negotiating issues of power, vulnerability and professional development." Journal of Education for Teaching 40(1): 20-33.

The purpose of this paper is to examine the ways in which a school-university mentorship programme promotes a range of growth experiences, both negative and positive, for the participating mentor teachers. The paper presents a brief description of a school-university partnership, discusses the ways in which this partnership operates, summarises the literature on mentoring and explores the concepts of power and vulnerability as related to how the veteran teacher participants in the study perceive the benefits and challenges of mentoring. The authors argue that the nature of the Master of Education in Teaching programme, with its heavily based clinical component and expanded student-teaching experience, provides a distinctive magnifying lens of mentoring issues that is highly relevant for other professional teaching units who are considering using mentoring as a form of professional development for teachers. This study gives insight into the experiences of five mentor teachers so as to deepen understanding about mentoring as a complex and challenging form of professional growth and leadership for teachers.

Robinson, M. (2014). "Selecting teaching practice schools across social contexts: conceptual and policy challenges from South Africa." Journal of Education for Teaching 40(2): 114-127.

In a country like South Africa, as in many other countries around the world, there is an imperative to prepare student teachers for a wide variety of social contexts, as part of breaking the cycle of disadvantage for poor learners. This article explores the challenge of placing student teachers for their field experience in schools that differ greatly in terms of their social and educational conditions. Drawing on interviews with teacher educators at one university, the article argues that criteria for identifying suitable schools for Teaching Practice do not easily support placements in schools in difficult conditions. Conceptual models of teacher education are explored, with a view to developing a model that supports teacher preparation for diversity. Policy recommendations are offered to support the preparation of excellent teachers for all schooling contexts.

Schechter, C. and T. Michalsky (2014). "Juggling our mindsets: Learning from success as a complementary instructional framework in teacher education." Teachers College Record 116(2).

Background: Collective learning in teacher education has primarily focused on learning from problematic practices/approaches, depriving preservice teachers of learning opportunities embedded in professional successes.

Purpose: The goal of the present study was to explore the value of systematic learning from success as a complementary reflective framework during the practicum phase in teacher preparatory programs.

Research Design: We developed four distinct reflective methods to examine the effect of integrating systematic learning from problematic as well as successful experiences in preparatory programs on physics student teachers' pedagogical content knowledge and sense of teaching efficacy.

Data Collection and Analysis: Participants were 124 second-year preservice physics teachers at four major research universities. One-way within-subjects analyses of variance (ANOVA) with repeated measures were conducted, with post-test performance as the dependent variable and with treatment (four reflective groups) as the independent variable.

Findings: Results indicated greater performance improvement on pedagogical content knowledge measures and on sense of self-efficacy measures when contemplating both problematic and successful experiences than when focusing solely on problematic experiences.

Recommendations: The current study may reinterpret the instructional framework of teacher education programs to include learning from successes too as a means of nurturing the practical wisdom necessary for teaching in dynamic school contexts.

Shim, J. M. (2013). "Multicultural education as an emotional situation: practice encountering the unexpected in teacher education." <u>Journal of Curriculum Studies</u> 46(1): 116-137.

Juxtaposing the concepts of screen memory, counter-transference and the holding environment within psychoanalytic theory, this essay explores the author's emotional experience, who begins the exploration by asking several questions. What happens to a teacher's emotional world and her consciousness in the process of trying to shift students' consciousness in multicultural education? What is the psychical consequence for teachers of colour who must listen to racist discourse as a precondition to convincing those to do otherwise? How does a teacher's emotional world influence student learning and development of critical consciousness? In working through her emotional response aroused by the students' questions in her multicultural education classes, the author discusses the importance of a conversation between psychoanalysis and critical multicultural pedagogies and why the conversation matters.

Stewart, M. (2014). "Making sense of a teaching programme for university academics: Exploring the longer-term effects." <u>Teaching and Teacher Education</u> 38: 89-98.

To professionalise teaching in universities, certificated teaching programmes for academics are increasingly widespread and often mandatory for new lecturers. Evaluations of impact have escalated in the past decade. Existing studies show mixed results but few consider the differential effects on individuals over the longer term. This study examines narratives of course participants a number of years following completion to understand how lecturers made sense of formal teaching development. Powerful outcomes materialise for some individuals, highly focused by personal reference frames and career experiences. Findings are related to wider studies of teacher growth and individual orientations to teaching professional development.

Van Steenbrugge, H., Lesage, E., Valcke, M., and A. Desoete (2013). "Preservice elementary school teachers' knowledge of fractions: a mirror of students' knowledge?" <u>Journal of Curriculum Studies</u> 46(1): 138-161.

This research analyses preservice teachers' knowledge of fractions. Fractions are notoriously difficult for students to learn and for teachers to teach. Previous studies suggest that student learning of fractions may be limited by teacher understanding of fractions. If so, teacher education has a key role in solving the problem. We first reviewed literature regarding students' knowledge of fractions. We did so because assessments of required content knowledge for teaching require review of the students' understanding to determine the mathematics difficulties encountered by students. The preservice teachers were tested on their conceptual and procedural knowledge of fractions, and on their ability in explaining the rationale for a procedure or the conceptual meaning. The results revealed that preservice teachers' knowledge of fractions indeed is limited and that last-year preservice teachers did not perform better than first-year preservice teachers. This research is situated within the broader domain of mathematical knowledge for teaching and suggests ways to improve instruction and student learning.

Wing Chan, Y. and X. Gao (2014). "Pre-service English teachers' perceptions of newly arrived children from Mainland China." <u>Journal of Education for Teaching</u> 40(2): 140-154.

The research reported here investigated pre-service English language teachers' perceptions of newly arrived immigrant children from Mainland China in Hong Kong. Seventeen participants, who had at least 10 weeks of experience working with these immigrant children during teaching

practicum, participated in focus group discussions and shared their perceptions. The data analysis revealed that the participants widely perceived these children as deficit and consider them a serious professional challenge. Further examination of the data helped reveal media, life and teaching practicum experiences with immigrant children as crucial sources that contributed to the formation of these perceptions. The findings call for teacher education programmes to involve pre-service teachers in critical engagement with the mass media and their own experiences so that they can address the deficit model applied by teachers to immigrant children.

Wong, J. L. N. (2014). "How does writing for publication help professional development of teachers? A case study in China." <u>Journal of Education for Teaching</u> 40(1): 78-93.

Publications by teachers reporting results or case studies of school-based teacher inquiry activities benchmark their professional development by indicating they have a "stance of inquiry." Such papers also disseminate valuable knowledge to the education community for sharing. Essay or case writing has always been a part of school-based teacher learning in China. The small-scale qualitative study reported here examines the impact of producing publications on the professional development of teachers within the context of educational reform. Findings show that producing publications contributes to teacher development in three ways. First, an expanded knowledge base gives the teachers new understandings of student-based learning. Second, teachers obtain insight into their practices by making their tacit knowledge explicit. Third, teachers have a sense of achievement by theorising personal experience. Publications serve as "boundary objects" which can potentially help teachers achieve and develop their professionalism by disseminating individual knowledge into the public knowledge domain with transformative learning. Such developments, however, normally tend to focus on expanding local pedagogical practice. More emphasis on the notion of "teachers as researchers" through critical reflection may help teachers perform as transformative intellectuals whilst searching for ways to retain teachers' voices in their written publications.

Youens, B., Smethem, L., and S. Sullivan (2014). "Promoting collaborative practice and reciprocity in initial teacher education: realising a 'dialogic space' through video capture analysis." <u>Journal of Education for Teaching</u> 40(2): 101-113.

This paper explores the potential of video capture to generate a collaborative space for teacher preparation; a space in which traditional hierarchies and boundaries between actors (student teacher, school mentor and university tutor) and knowledge (academic, professional and practical) are disrupted. The study, based in a teacher education department in an English university, is contextualised in the policy context of school-university partnerships. Video capture is used as a vehicle to promote dialogue and collaborative practice between partners during school-based elements of a teacher preparation course. Analysis highlights the power of this space to promote reciprocal learning across the partnership.

Zhang, D., Wang, Q., Losinski, M., and A. Katsiyannis (2014). "An examination of preservice teachers' intentions to pursue careers in special education." <u>Journal of Teacher Education</u> 65(2): 156-171.

An understanding of one's intention to pursue a career related to special education is crucial yet there is limited research in this area. This study examined factors that influence teacher candidates' intention to pursue a career in special education by surveying 214 preservice teachers. Data were analyzed using path analysis to capture the complex relationships. Results revealed that interest/commitment and outcome expectations of the special education careers were the two most important predictors of preservice teachers' intention to work in special education–related careers. Special education teaching efficacy only has an indirect effect on their special education career intention via two mediator variables (i.e., special education outcome expectations and career interest/commitment to children with special needs). Preservice teachers' personal and work experiences with individuals requiring special services directly influence their interest and commitment to serving individuals with special needs, and thus indirectly impact their intention to pursue a special education career.

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Abstract: We examine how the declarative-conceptual general pedagogical knowledge (GPK) assessed via a paper-and-pencil test can be understood as a premise for early career teachers' ability to notice and interpret classroom situations assessed via video-vignettes. Longitudinal data from TEDS-M conducted in 2008 at the end of teacher education and a follow-up study in Germany in 2012 is used. Teachers' skills to notice and interpret differ. Interpreting correlates with the current level of GPK, whereas noticing does not. GPK at the end of teacher education neither predicts noticing nor interpreting, which suggests teachers' cognitions are reorganized during the transition into teaching.

Summary prepared by Colleen Kuusinen

Background

In the last decade, international research has converged on conceptualizing teacher knowledge as a multi-dimensional construct, composed of content knowledge, pedagogical content knowledge, and general pedagogical knowledge (GPK). The authors of this study focus on the latter construct of GPK, empirically investigating to what extent the declarative-conceptual GPK of early career mathematics teachers predicts their ability to notice and interpret (defined below) classroom situations. Additionally, this article seeks to examine the validity of pen and paper assessments along with the use of video vignettes to assess GPK and whether the skills of noticing and interpreting can be distinguished empirically.

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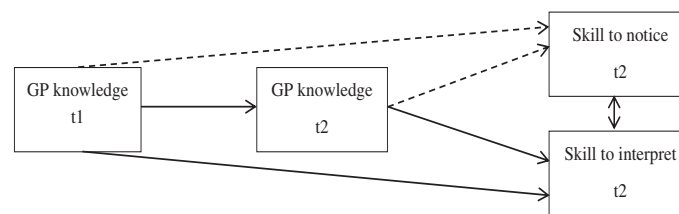
t1: pre-service teachers at the end of teacher training in 2008 (TEDS-M)

t2: early career teachers in 2012 (TEDS-M Follow-Up).

Fig. 8. Longitudinal path modeling of teachers' GPK and their skills to notice and interpret classroom situations.

*Taken from (König et al., p. 84).

RQ1**:** How is general pedagogical knowledge (GPK) of early career mathematics teachers correlated with skills to notice and interpret classroom situations?

RQ2: Does GPK acquired during initial teacher education predict early career mathematics teachers' ability to notice and interpret classroom situations presented to them through video vignettes?

Defining Terms

GPK: As a result of an extensive literature review of all countries participating in the TEDS-M project (see König, 2011, for detailed descriptions of this study), the authors determined that two tasks comprise central aspects of teaching: instruction and classroom management. Therefore, the authors define GPK as comprising generic theories and methods of instruction, learning, and classroom management. Instruction and learning was further broken down into three

subdimensions: structure, adaptivity, and assessment. König et al. write that this resulted in a total of four dimensions of GPK for which a paper assessment could be developed, as described in the following table:

Test dimensions	Topics covered by the test items
Structure	- structuring of learning objectives - lesson planning and structuring the lesson process - lesson evaluation
Motivation/ classroom management	- achievement motivation - strategies to motivate single students/ the whole group - strategies to prevent and counteract interferences - effective use of allocated time/ routines
Adaptivity	- strategies of differentiation - use of a wide range of teaching methods
Assessment	- assessment types and functions - evaluation criteria - teacher expectation effects

Taken from (König et al., p. 78).

Noticing: The authors define "noticing" as observing a concrete situation provided via video clip and identifying important aspects of instruction. What qualifies as an important aspect is left somewhat undefined by the authors, who argue that important elements are those that can be categorized within a rich network of schemata and scripts related to instruction. While this assumes that teachers develop "correct" schemata over time as a result of their experience, the authors cite evidence from other researchers that expert teachers identify relevant aspects of instruction more accurately and precisely than novices (Berliner, 1986; Sabers, Cushing, & Berliner, 1991). Additionally, they argue that holistic perception is another aspect of teacher expertise in noticing; the interconnectedness of their knowledge allows them to intuitively grasp a situation and create more complex mental models of an instructional situation, aiding in their problem-solving.

Interpreting**:** The authors define "interpreting" as reasoning about the functions of lesson elements, instructional intention, and rationale in the context of teacher-student interactions. Interpreting is defined as a transformational process; expert teachers exhibit greater ability to transform knowledge into functional interpretations because of greater amount and quality of knowledge in long-term memory.

Data sources
TEDS-M international study (2008, see König, 2011 article for details). Follow-up study in 2012 in Germany, when teachers have 4 years or less of teaching experience.

Sample: 171 German middle school mathematics teachers, 32.1 years old (SD 5.9). Nearly 60% are female. About 44% were teachers for grades 1 or 5 through 10 (primary and lower secondary, or lower secondary only) while 56% were teachers for grade 5 through 12 (lower and upper secondary level). Convenience sample, biased towards teachers with stronger GPK, representing high performance group.

Format of assessment
GPK: Within each of the four subdimensions of GPK, three types of cognitive processes are assessed: *retrieval, understanding or analysis,* and *generation.*
- Structure [subdimension] + *generate* [cognitive process] example: "Imagine you are helping a future teacher to evaluate her lesson… what questions would you ask?" (open-ended)
- Motivation [subdimension] + *retrieval* [cognitive process]: "Which of the following represents an example of intrinsic motivation? Extrinsic?" (multiple-choice)

<u>Noticing and interpreting</u>: Teachers were shown a 3-4 minute video clip followed by a series of items about that clip.

Noticing: 18 items multiple-choice items with a 4-category Likert-rating scale ranging from "completely agree" to "completely disagree."

Example for precision of teacher perception: "The teacher presents the lesson's task visually AND acoustically."

- Example of teacher holistic perception: "Most students take an active part in the lesson."

Interpreting: 16 open-response items to allow teachers to provide cognitively more complex statements.

- Example: In-depth analysis of the three student pairs' cooperation from a pedagogical perspective.

Each statement referred to the teaching in one video-clip specifically. An expert rating was carried out to determine which category of each item's rating scale was to be scored as "correct."

<u>Methods</u>: The authors used IRT scaling approaches and exploratory factor analysis to answer RQ1 regarding the correlations of the skills with GPK as well as the ability to distinguish them empirically. One, two, and three-dimensional models of GPK were assessed. Path analysis was used to answer RQ2, which examined the predictive validity of GPK for noticing and interpreting skills.

Results: RQ1

The three-dimensional model fit the data better than the 2 and 1-dimensional model, suggesting that GPK is distinguishable from the skills of noticing and interpreting. Supporting this assertion, a stronger correlation exists between interpreting (.37) and GPK than noticing and GPK (.17). Finally, EFA of the noticing and interpreting dimensions showed that a two-factor solution (χ^2/df=1.32, RMSEA=.05) fit the data better than a one-factor solution (χ^2/df=1.42, RMSEA=.06).[2] However the authors did not report whether the two-factor solution was a significantly better fit than the one-factor solution (i.e., by reporting results of a Chi-squared difference test).

Model 2			Model 3		
	(1)			(1)	(2)
(1) Knowledge			(1) Knowledge		
(2) Noticing/interpreting	0.29		(2) Noticing	0.13	
			(3) Interpreting	0.37	0.17

Taken from König, et al., p. 85.

Results RQ2

Only GPK at t2 predicted skill to interpret (0.45, p<.01). GPK at t1 did not predict GPK at t2 (.05, ns).

Authors' conclusions

- Professional teacher competence is multi-dimensional and does not represent a single latent ability.
- The skill to notice relevant classroom situations does not depend on teacher's explicit knowledge (the four dimensions of GPK).
  - This is because noticing represents internalized, implicit knowledge that "can be used without conscious effort and verbal explication" (p. 85) which is conceptually and empirically distinct from knowledge than can be explicated: GPK and interpreting.

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[2] * A good model fit is indicated if the RMSEA is less than .05; values of less than .08 are considered acceptable (Hu & Bentler, 1999; Marsh, Hau & Wen, 2004).

- The skill to interpret classroom situations DOES strongly depends on GPK acquired through teacher education, but that knowledge is reframed and reorganized from transition from pre-service to in-service teaching.

Questions

- If noticing does not depend on explicit knowledge as measured by GPK, what does it depend on?
- The authors acknowledge that one might use these results to conclude that GPK at the end of in-service training does not matter and we should only look at teachers' current levels of GPK. They argue against this conclusion, stating that all correlations were positive and nearly reached significance. For what outcomes might end-of-training GPK be *more* relevant if not the ones assessed here?

König, J., Blomeke, S., Paine, L., Schmidt, W. H., & Hsieh, F.-J. (2011). General pedagogical knowledge of future middle school teachers: On the complex ecology of teacher education in the United States, Germany, and Taiwan. *Journal of Teacher Education*, *62*(2), 188–201.

Abstract: For more than two decades, three components of teacher knowledge have been discussed, namely, content knowledge (CK), pedagogical content knowledge (PCK), and general pedagogical knowledge (GPK). Although there is a growing body of analytic clarification and empirical testing with regard to CK and PCK, especially with a focus on mathematics teachers, hardly any attempt has been made to learn more about teachers' GPK. In the context of the Teacher Education and Development Study in Mathematics (TEDS-M), Germany, Taiwan, and the United States worked on closing this research gap by conceptualizing a theoretical framework and developing a standardized test of GPK, which was taken by representative samples of future middle school teachers in these countries. Four task-based subdimensions of GPK and three cognitive subdimensions of GPK were distinguished in this test. TEDS-M data are used (a) to test the hypothesis that GPK is not homogenous but multidimensional and (b) to compare the achievement of U.S. future middle school teachers with future middle school teachers from Germany and Taiwan. The data revealed that U.S. future teachers were outperformed by both the other groups. They showed a relative strength in one of the cognitive subdimensions, generating strategies to perform in the classroom, indicating that in particular they had acquired procedural GPK during teacher education.

Summary prepared by Colleen Kuusinen

Although this article is not recently published, we felt it provided interesting and useful information to guide the further interpretation of König et al. 2014. Additionally, this 2011 article by the same authors describes the context of the TEDS-M study in further detail, describes the development of the pen and paper assessment of GPK, and provides comparison between novice teacher skills in three different countries: the U.S., Taiwan, and Germany.

Purpose: Reports how GPK was conceptualized in the context of TEDS-M and compares U.S., Taiwanese, and German teachers' levels of GPK.

Background: Teacher Education and Development Study: Learning to teach Mathematics (TEDS-M) carried out in 2008 with the support of the International Association for the Evaluation of Educational Achievement (IEA). TEDS-M is:
- The first international large scale assessment of future teachers that worked with representative samples.
- Focused only on future teachers' mathematical content knowledge (MCK) and mathematics pedagogical content knowledge (MPCK).

Three countries (U.S., Taiwan, Germany) opted to participate in the second study to measure general pedagogical knowledge (GPK).

Development of GPK definition: The authors worked to find a definition of GPK that was relevant to all countries participating in the studies. An extensive literature review revealed two tasks of teachers consistent across cultures: instruction and classroom management.
- König et al. drew on work of Shulman (1987), Grossman and Richert (1988), Weinert (2001), and Bromme (1992, 1997, 2001) to define GPK.
- In 2008, lack of empirical studies measuring GPK made it difficult to develop items to assess GPK and to distinguish it from mathematical pedagogical content knowledge MPCK.
  - Framework focused on "the mastering of professional tasks and reaching important objectives of the teaching profession" (p. 190).

- o Theoretical framework structured in a task-based way as opposed to formal structure of general pedagogy as an academic discipline.

- König et al. developed four subdimensions of GPK (see Table from previous summary, which summarizes these subdimensions).

Development of GPK measure: The four subdimensions of GPK and three levels of cognitive demands (recall, understand or analyze, generate) made up a matrix that served as a heuristic for item development. For each cell, a subset of items was developed.

- Several expert reviews in the United States, Taiwan, and Germany as well as two large pilot studies were carried out.
- Experts for first item review (pilot study) were teacher educators in the field of general pedagogy. Their research had to be related to the topic of teacher knowledge and they needed to hold PhDs or be PhD candidates.
- Experts for second and following expert reviews (final test instrument) had to hold a university chair with a specialization in research about teacher knowledge.
- For the open-response items, coding rubrics were developed and reviewed by experts on teacher education in the United States, Germany, and Taiwan in order to prevent culturally biased response coding and scoring. Cohen's Kappa on these items ranged from .80 to .99, with an average mean of .91 (*SD* = .07).

Example *generate* item coding: "Imagine you are helping a future teacher to plan her lesson. To help her adequately analyze her lesson, what [10] questions would you ask her?" Answers were coded as appropriate if they addressed four criteria→ *model response from U.S. future teacher*:

- Context of the lesson (e.g. prior knowledge) →*Do your students have prior knowledge about the subject?*
- Input (e.g., objectives of the lesson) → *What are your objectives?*
- Process (e.g., teaching methods used) → *Are the students working individually or in groups?*
- Output (e.g., student achievement) → *Have your students gained the knowledge from the lesson?*

Sample: In a two-stage process, random samples were drawn from the target population in each participating country (U.S n=607; Germany n=771; Taiwan n=365).

- Target population: future teachers in their final year of training for lower secondary (middle) school positions as either generalist teachers or mathematics specialists.
- Samples stratified according to important teacher education features like route (consecutive vs. concurrent programs), type of program (grade span certified to teach), or region (e.g., federal states) in order to reflect accurately the distribution of future middle school teachers' characteristics at the end of their training.

Empirical findings on structure of GPK
Rasch scaling (one-dimensional model) showed it possible to create an overall GPK score. Reliability was good (.78). Four-dimensional models were also assessed:

- The reliability estimates of the four topic subscales of GPK were lower than the reliability of the overall GPK score, but acceptable (.70 for Structure, .72 for Adaptivity, .65 for Motivation/ Classroom Management, and .64 for Assessment).
- High correlation between Assessment and Classroom Management/Motivation might "mirror coherences of corresponding opportunities to learn in teacher education in contrast to Structure and Adaptivity."
- Low correlations suggest GPK is a heterogeneous construct.

Model 2	1	2	3
1. Adaptivity			
2. Structure	.60		
3. Motivation/Management	.63	.57	
4. Assessment	.69	.65	.80

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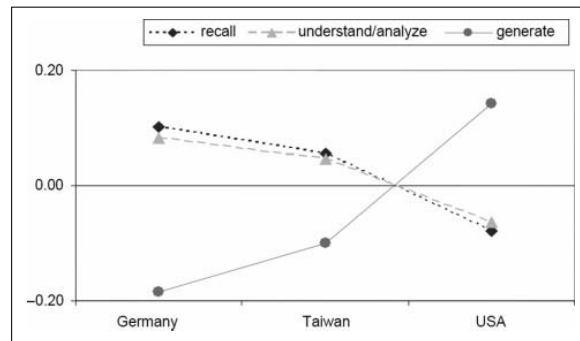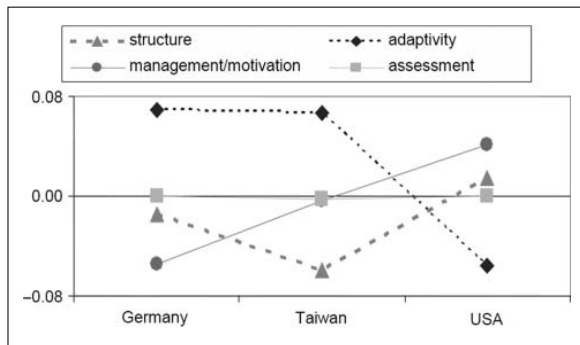** Taken from (König et al., p. 195).*

Low reliability of generate skill (data not provided by author) indicates that it is difficult to measure. The authors suggest this may be because generate measures declarative and procedural knowledge, while recall and understand/analyze measure declarative knowledge.

Cross-cultural differences in GPK and cognitive skills
- No significant statistical difference between teacher achievement in Germany and Taiwan.
- Ipsative measures used to standardize scores (standardized differences of each subdimension score from the mean of all subdimensions). This led to a difference of 1.5 standard deviations between U.S. and other countries.
- U.S. teachers scored lower on the "Adaptivity" subdimension and higher on skill of generating strategies compared to German and Taiwanese teachers (statistical significance not reported).

Country	M	SE	SD
Germany	576	4.9	85
Taiwan	572	3.2	52
International	**500**	**2.2**	**100**
United States	440	3.0	66

* Taken from (König et al., p. 195).

* Taken from (König et al., p. 196).

Authors' conclusions:
- The authors conclude that there may be greater opportunity in Taiwan and Germany to develop systematic (declarative) knowledge than in the U.S. U.S. teachers have more opportunity to develop skills (procedural knowledge) as assessed through items in which teachers had to *generate* ideas.
    - Low reliability of *generate* items may weaken this claim.
    - U.S. future teachers scored lower than their international peers in "Adaptivity" and higher in "Management and Motivation." This may suggest that future teachers in the U.S. are learning procedural skills to motivate and manage classroom behavior.
- While teaching is a culturally bound practice, the authors feel their cross-cultural comparative approach enables the field to see U.S. teacher education with a kind of "peripheral vision" (Bateson, 1994).

*Time will be allotted during the TeachingWorks March 21st session to examine more GPK test items from other dimensions.