



## **TPACK Newsletter, Issue #27: March 2016**

Special Spring 2016 Conference Issue

Below please find a listing of TPACK-related papers/sessions that will be presented at the [SITE conference in March](#) in Savannah, Georgia; at the [AERA annual meeting in April](#) in Washington, DC; and at the [ISTE conference in June](#) in Denver, Colorado. (That's 66 TPACK-related conference sessions in just 3 months!)

### **SITE 2016 TPACK-Related Presentations**

Adams, S., & Bernal, E. (2016, March). *Evaluating a program of teacher training in educational technology and STEM using two measures of TPACK*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48079/>

#### Abstract:

"We evaluated a course for training teachers to use educational technologies in science, technology, engineering, and mathematics (STEM) using multiple methods including a Graphical Analysis of TPACK Instrument (GATI) that was given at the end of the course. Other data sources included a TPACK survey given at the beginning and end of the course. The teacher training model includes a 3-unit summer university course with a field experience project at a youth organization. Teachers worked in teams of four to six to plan a set of four 2-hour workshops for the youth. 24 teachers completed the course, 13 agreed to participate in the study, 12 provided complete surveys, and 11 provided GATI diagrams. There were statistically significant increases in the mean scores in three TPACK subscales: TCK, TPK and TPACK. The GATI analysis extended the survey analysis and corroborated it in that mean increases in TPACK subscale scores were higher when GATI diagrams showed increased knowledge."

**Date/Time:** Thursday, March 24, 4:45 – 5:15pm

Alabbasi, D. (2016, March). *Examining the possible potential of the process of creating digital stories on shaping graduate student teachers' perceptions towards the TPACK model*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/4818>

Abstract:

“The study seeks to investigate graduate students’ perceptions towards the process of creating digital stories. The study highlights the elements of digital storytelling, features and the challenges that are faced when creating digital stories. We explored how that process influenced students’ effective technology integration skills as depicted in the Technological Pedagogical Content Knowledge (TPACK) framework. A five point Likert scale questionnaire was used to collect participants’ reflections about creating digital stories and their perceptions on how it affects their TPACK skills as well as their views about the pedagogical benefits of using digital stories as a strategy for effective teaching. Eighty-five graduate students enrolled in an instructional technology program participated in the study. Generally, the results showed a very strong connection between creating digital stories and building effective technology integration skills in graduate students.”

**Date/Time:** Wednesday, March 23, 10:15 – 10:35am

Baker, S., & Willis, J. (2016, March). *Assessing teacher/librarian collaboration: Perspectives of teacher and school librarian candidates*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/47990/>

Abstract:

“This research explored collaboration between school librarian candidates and teacher candidates as they worked to effectively integrate technology into curriculum. A study premise of the research is that effective technology use and integration is deficient; teachers may utilize technologies, but are not always knowledgeable in how to integrate effectively to improve teaching/student learning. As technologies increase in schools, it is critical learning opportunities are provided to help teachers meaningfully integrate technology. This study served to benefit researchers by gaining a better understanding of technological, pedagogical, and content knowledge needed to effectively integrate technology; how partnerships between school librarian candidates and teacher candidates impact lesson development, teaching, and technology integration; and contributes to literature in technology integration, instructional technology, teacher/librarian collaboration, and teacher education.”

**Date/Time:** Friday, March 25, 10:15 – 10:45am

Caro, R. (2016, March). *Developing preservice teachers’ technology integration skills using TPACK*. Virtual paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48443/>

Abstract:

“This case study examined the utility in integrating the use of TPACK as a metric in determining the technology integration skills of preservice teachers taking an advanced technology integration course specifically developed for preservice teachers. Two groups of preservice teachers took part in this study. One group of preservice teachers was explicitly exposed to the TPACK (Technology, Pedagogy, and Content Knowledge) Framework and the other group was not. Analysis of the data showed the explicit group to have higher scores in Models of TPACK (.60), Overall TPACK (.80), Technology & Pedagogy Knowledge (TPK .56), Technology Knowledge (TK .60), Pedagogy Knowledge (PK .55), and Content Knowledge (CK .32). The findings suggest the explicit group to produce overall gains in their technology integration as measured in the TPACK assessment and reflections. The non-explicit group did however show more improvement in TCK (.82) and PCK (.71) for reasons unclear in this study.”

**Date/Time:** Virtual paper available from  
<https://www.academicexperts.org/conf/site/2016/papers/48443/>

Carpenter, J., Graziano, K., Borthwick, A., DeBacker, T., & Finsness, E. (2016, March). *A diagnostic tool to help leaders develop TPACK ready teacher preparation programs*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48127/>

Abstract:

“College administrators must play a key role in the successful transformation of educator preparation. This presentation addresses the development and use of a diagnostic tool designed for leaders and leadership teams implementing initiatives related to the preparation of TPACK ready teacher candidates. In recent years, members of the Innovation & Technology Committee of the American Association of Colleges of Teacher Education have collaborated with educational leaders to develop and pilot the diagnostic tool. It is meant to assist leaders as they seek to change school culture and practices to ensure that teacher candidates are ready to grow as TPACK proficient teachers. We will present and discuss the emergent findings from case studies of the use of the diagnostic tool.”

**Date/Time:** Thursday, March 24, 1:45 – 2:45pm

Dalal, M., Archambault, L., & Shelton, C. (2016, March). *Examining TPACK and technology integration decision-making among international teachers*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48054/>

Abstract:

“This mixed-methods study is situated in the context of a teacher education exchange program in which international secondary school teachers from various countries around the world participate in a technology professional development workshop. Drawing upon the technological pedagogical content knowledge (TPACK) framework, our ongoing study aims to examine the perceived ability of the international teachers before and after the professional development. A survey of TPACK skills and a design task will be used to explore teachers’ developing TPACK and the rationale behind the technology integration decisions made by the international teachers in instruction planning. We anticipate that this study will have considerable implications for international teachers’ professional development programs and the sustainability of such efforts.”

**Date/Time:** Wednesday, March 23, 11:30 – 11:50am

Di Blas, N., & Paolini, P. (2016, March). *Distributed and dynamic TPACK: Evidences from a (large) case study*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48152/>

Abstract:

“The concept of “distributed TPACK” (SITE 2014) suggests that “distributing the knowledge across a system of resources and support is a more accurate and realistic depiction of what teachers actually do in the real setting of a classroom” with respect to thinking that all the knowledge resides in just the teacher’s head. In other words, teaching with technology is seen as a learning process where the required knowledge (about T, or C, or P) is distributed across a group of “actors” (mainly, but not exclusively, teachers and students) and resources. In this paper we argue that TPACK is often not only distributed but also dynamic, in the sense that the relevant knowledge is dynamically shared among various actors: teachers, students, outside helpers, experts, etc., so that the final distribution differs from the initial one. The hypothesis is supported by empirical evidence, obtained from a large case study involving hundreds of teachers on the job with a digital storytelling activity.”

**Date/Time:** Wednesday, March 23, 1:45 – 2:15pm

Dreon, O., & Shettel, J. (2016, March). *The impact of authentic: How field experiences and authentic projects influence TPACK development*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48052/>

Abstract:

“This study tracks the evolution of an instructional technology course designed for

preservice elementary teachers. Traditionally, the course incorporated assignments where participants' technical knowledge was fostered. Significant changes to the course evolved as a result of implementing a problem-based approach in support of a "flipped classroom" initiative in a local school. In the first iteration of the project, preservice teachers served as instructional designers, creating digital media after observing language arts instruction in elementary classrooms to inform their design. In later iterations of the project, preservice teachers took on additional teaching roles coordinated with the digital media they created. Across the evolving iterations of the course, pre- and post-tests were used to examine the impact that field experiences have on preservice teachers' TPACK development."

**Date/Time:** Wednesday, March 23, 3:20 – 3:40pm

Dreon, O., & Penny, C. (2016, March). *Teacher preparation for online learning: What should we be researching?* Roundtable discussion hosted at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48051/>

Abstract:

"As the popularity for online learning increases, teacher education programs are re-envisioning instructional technology courses, methods training and field placements. The concern, however, is that the practices of online teaching are still developing and the research base hasn't fully examined the constructs and frameworks that most impact good online instruction or online teacher development. This roundtable session will examine several traditional research areas that inform teacher preparation programs (teacher self-efficacy, TPACK, etc.) and discuss how the research areas would need to be re-examined for use in online teacher preparation. Additionally, the roundtable will discuss what new areas for research may warrant examination based on the changing context of online learning."

**Date/Time:** Wednesday, March 23, 11:30am – 12:30pm

Ellis, J., Dare, E., & Roehrig, G. (2016, March). *From consumers to creators: Adventure learning and its impact on pre-service teachers' TPACK and technology integration.* Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48853/>

Abstract:

"This study utilizes an explanatory embedded case study methodology (Yin, 2014) to observe the effect of an Adventure Learning (AL) experience on pre-service K-12 science teachers' TPACK and technology integration in the context of a graduate-level

teacher licensure course. Participating teachers co-created lesson plans, instructional strategies, and an online learning environment for Chasing Aurora, a nascent AL project on astronomy education (Hechter & Macdonald, 2015). In all cases, participating teachers showed gains in their ability to identify specific strategies for enacting content-based technology integration, a hallmark of TPACK. Teachers also demonstrated a shift away from choosing technologies that replace or amplify current instructional practices toward those that promote transformational opportunities for learning.”

**Date/Time:** Thursday, March 24, 10:15 – 10:45am

Fitzgerald, A., & Adams, S. (2016, March). *Design and formative evaluation of an e-learning module for training and teachers to integrate technology into teachers*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48946/>

Abstract:

“We describe the design and formative evaluation of online-based e-learning professional development training module for teachers to develop their knowledge of technology, pedagogy, and content knowledge (TPACK). The design was guided by research on TPACK, e-learning design, and adult learning. To evaluate the module, 76 teachers from two middle schools in Southern California were invited to use the training module, and 20 completed questionnaires (with 33 questions) about their experiences. Results indicate participants gained knowledge and skills for using their school computer lab, integrating technology into their classroom instruction, and found the e-learning training module to be helpful overall. The module represents a promising strategy for teacher professional development, and is available online at: <http://j.mp/TechReadyPD>”

**Date/Time:** Thursday, March 24, 10:45 – 11:15am

Foulger, T., Wetzel, K., Lindsey, L., Buss, R., & Pasquel, S. (2016, March). *Using TPACK as a professional development framework: Benefits, limitations, and exploration of other possible frames*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48467/>

Abstract:

“For the Mary Lou Fulton Teachers College, moving from teaching a stand-alone course to addressing technology integration in a programmatic manner through technology infusion has been an effort of incremental change, guided by cycles of action research conducted by the Technology Infusion Team. The TPACK framework initially guided the

work, and proved to be useful in helping administrators, course coordinators, and instructors of technology infused courses to conceptualize the work. But as the effort develops, we experienced limitations to its use for our specific professional development needs. This paper looks at initial uses of TPACK based on its strengths to conceptualize teaching with technology, but also demonstrates its limitations as the professional development progressed over time. Strength, limitations, and specific situations where TPACK was useful for professional development in teacher preparation contexts are highlighted.”

**Date/Time:** Thursday, March 24, 1:45 – 2:15pm

Gravel, R. J., Mayall, H., & York, C. (2016, March). *In-service teachers’ participation in a professional development program aligned with the TPACK framework*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/47965/>

**Abstract:**

“This session will present an overview of a case study conducted within an Illinois PreK-12 public school district that utilized a pre/post self-perfection instrument to identify growth in TPACK of participants. A discussion of the professional development activities utilized within the study will be presented, as well as qualitative findings that support TPACK growth as identified through the self-perception instrument. The presentation will conclude with recommendations for future research, and results from a repeated study with a larger population conducted in 2014.”

**Date/Time:** Friday, March 25, 3:20 – 3:40pm

Haley-Mize, S. (2016, March). *Employing the TPACK framework to prepare preservice educators to address issues of equity for students with special needs*. Roundtable discussion hosted at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48348/>

**Abstract:**

“General education classrooms are increasingly serving students with a wide range of learning needs. In order to facilitate the development of the complex set of skills required to ensure meaningful access and participation in authentic learning tasks for all students, the TPACK (Mishra & Koehler, 2006) framework was used to design courses in Special Education that expose preservice educators to innovative uses of technology to access the course content and help prepare participants to reach and ensure equity for all students. A mixed methods design examined the growth in self-reported TPACK over a two semester course of study in Special Education in one cohort of preservice teachers. In addition to the self-report measure, lesson plans were analyzed to investigate enacted TPACK as evidenced by the role of technology in the learning

activities articulated in the plans.”

**Date/Time:** Thursday, March 24, 3:00 – 4:00pm

Hammond, T., & Oltman, J. (2016, March). *The sleeping giant awakens? Two cases in geospatial tools re-shaping curricular content in elementary social studies*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48248/>

Abstract:

“The literature on technology integration on social studies education is extensive but has largely observed adoption without any resulting impact on the curriculum. One family of technologies that holds particular promise for not just adoption but curricular transformation is geospatial tools. The researchers have had the opportunity to work with two dyads of elementary social studies teachers to integrate geospatial tools (spatially-referenced augmented reality and Google Earth) into existing instruction. Following this first implementation, the teachers have expressed a desire to revise their curriculum to make better use of these geospatial tools and their associated pedagogies. The resulting case studies provide an opportunity to observe the transformative impact that geospatial tools can have upon the social studies curriculum, as well as a detailed examination of four elementary teachers' social studies TPACK.”

**Date/Time:** Thursday, March 24, 4:15 – 4:45pm

Harris, J., & Hofer, M. (2016, March). *Planning for deep learning using TPACK-based learning activity types*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48379/>

Abstract:

“Teaching for students’ deep learning, while rooted in venerable 20th-century educational research and theory contributed by Vygotsky, Dewey, and others, is taking on a new urgency as heretofore theoretical depictions of 21st-century learning are being operationalized in K-12 classrooms. What is the nature of deep learning? What are the pedagogical roles and practices that encourage it? How can we help teachers to plan learning experiences for and with their students that encourage and support deep learning, incorporating the use of digital tools and resources in maximally effective ways? This chapter uses extant literature on deep learning, teaching for deep learning, and recent calls for teachers’ enhanced “pedagogical capacities” (Fullan & Langworthy, 2014) to argue for a reconceptualized use of TPACK-based learning activity types in educational planning for students’ deep learning.”



**Date/Time:** Thursday, March 24, 10:45 – 11:15am

Herring, M., Koehler, M., Mishra, P., Rosenberg, J., Teske, J., Kessler, A., ...Harris, J. (2016, March). *Technological pedagogical content knowledge: Looking forward*. Symposium conducted at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48396/>

Abstract:

“Research on Technological Pedagogical Content Knowledge (TPACK) has thrived in recent years. Scholarship has examined how teachers develop and apply their knowledge base in diverse settings (e.g., K-12, post-secondary, and informal learning environments) and across content areas, and recent research has led to a proliferation of means of understanding how teachers’ knowledge develops. Building on the work of contributors to the 2nd edition of the TPACK Handbook, this symposium session looks forward on topics such as teacher professional development and learning, options for measures, and the impact of diverse settings. Specifically, this session focuses on advances in research on the TPACK framework, new directions for research approaches and measures, and nascent strategies for developing teachers’ TPACK.”

**Date/Time:** Thursday, March 24, 1:45 – 2:45pm & 3:00 – 4:00pm

Hofer, M., & Harris, J. (2016, March). *Open educational resources (OERs) for TPACK development*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/49080/>

Abstract:

“We have developed customizable, modularized, TPACK-based online short courses that are designed to help elementary and secondary preservice teachers learn to plan technologically enhanced, curriculum-based lessons, projects, and units. We offer these multimedia materials to teacher educators internationally as open educational resources (OERs) via an attribution/share-alike Creative Commons license (<http://creativecommons.org/licenses/by-sa/4.0/>) at <http://activitytypes.wm.edu/shortcourse/>. In our SITE 2016 presentation and in this paper, we introduce, explain, demonstrate, and discuss these TPACK-based OERs, and our aims in developing, using, and making them available to others. We hope that our efforts will catalyze more widespread sharing and adaptation of TPACK learning materials among teacher educators.”

**Date/Time:** Wednesday, March 23, 3:40 – 4:00pm

Kaplon-Schilis, A., & Lyublinskaya, I. (2016, March). *Examining differences in TPACK levels assessed through pre-service teachers STEM lesson plans: Case study*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48254/>

Abstract:

“This paper presents the case study that focuses on examining the differences between levels of TPACK of pre-service special education elementary teachers taking the graduate level course Integrating Technology in Mathematics and Science Instruction in Special Education and Inclusive Classrooms in a New York City public university. The purpose of this study was to analyze how to use the TPACK Levels Rubric (Author +1, 2012) to measure pre-service teachers’ TPACK level based on various artifacts. The case study focused on a single pre-service teacher’s lesson plan representing average TPACK level for the sample population. The authors examined differences in levels of TPACK for each component of the TPACK Levels Rubric and explained how selected lesson plan was scored based on rubric criteria. Then authors developed examples of how the scored lesson plan would look like if it were one TPACK level below or one level above the actual level.”

**Date/Time:** Thursday, March 24, 3:00 – 3:20pm

Kassab, L. (2016, March). *Technology-using teachers’ confidence in technological pedagogical content knowledge (TPACK) and assessment literacy: What demographic factors make a difference?* Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48445/>

Abstract:

“Educational research indicates that teachers feel most unprepared are assessment (DeLuca, 2012) and technology (Kramarski & Michalsky, 2010). The Teacher Assessment Practices Survey (TAPS) study was developed to investigate the assessment literacy and technological pedagogical content knowledge (TPACK) of technology-using teachers. Two questions guided the analysis of quantitative data collected through a survey of 84 participants: What is the confidence of technology-using teachers in assessment literacy and TPACK? How did demographic or contextual factors align with confidence levels? Participants reported high levels of confidence in both assessment literacy and TPACK. Multiple ANOVA were run using contextual variables such as years teaching, membership in professional organizations, and educational background. There were few statistically significant differences in confidence items. Further results and implications for practice and research will be presented.”

**Date/Time:** Friday, March 25, 2:05 – 2:25pm

Keane, K. (2016, March). *A beginner's guide to teaching the TPACK framework in an educational technology graduate program*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48707/>

Abstract:

“This paper describes a successful approach to introducing graduate level students enrolled in an educational technology program to the TPACK framework. Using a backwards design model, the Technological Pedagogical Content Knowledge (TPACK) framework was presented to these students through a series of engaging and creative activities that utilized varying levels of technology integration ranging from high tech to no tech. Particular emphasis was placed on intentional and thoughtful technology integration and as such, course activities and assessments were specifically selected to model appropriate TPACK-alignment. Course objectives, a description of a few learning activities, assessment evidence, and an overview of key learning events and instruction are also presented. Ultimately, the graduate students competently grasped the TPACK framework and were able to overcome obstacles surrounding pedagogical knowledge to successfully apply the TPACK framework to their own practices.”

**Date/Time:** Thursday, March 24, 3:00 – 3:20pm

Keenan, S., Rosenberg, J., Greenhalgh, S., & Koehler, M. (2016, March). *Examining teachers' technology use through digital portfolios*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48398/>

Abstract:

“Digital portfolios designed by educators have the potential to serve as assertions of technology knowledge (TK). This study describes and begins to evaluate a proposed method for assessing educators' asserted TK through the platforms and artifacts that comprise these portfolios. Using 589 digital teaching portfolios, we identify and analyze trends observed across the platform technology and report on the development of a coding frame for analyzing the artifacts contained within these portfolios. The results of this study provide some interesting clues as to the nature of educators' technology knowledge; however, the primary utility of these results is as a foundation for future research. Researchers should build on and evaluate the information in this study to further explore the use of portfolios for examining asserted TK.”

**Date/Time:** Tuesday, March 22, 4:45-5:15pm

Lee, T., & Forasiepi, C. (2016, March). *Cubing the curriculum for critically humanistic and technologically sound literacy pedagogy*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/49044/>

Abstract:

“This paper outlines the need for a technocultural critical humanistic pedagogical framework that fosters the transdisciplinary development of critical literacy across instructional contexts. Examination of the educational situation through the lens of counter-hegemonic analysis uncovers fundamental deficits in current K-12 approaches to critical literacy. The paper includes implications for school systems and teacher education. It is suggested that incorporating TPACK theory into pedagogical frameworks will help define TPACK in actionable and pragmatic ways so that teachers and researchers can better utilize the insights of theory to inform and transform critical literacy practice.”

**Date/Time:** Friday, March 25, 2:25 – 2:45pm

Lindsey, L., Buss, R., Foulger, T., Wetzel, K., & Pasquel, S. (2016, March). *The technology infusion iTeach experience: Preparing student teachers to integrate technology*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48464/>

Abstract:

“Teacher educators have employed the TPACK framework to guide their efforts in preparing pre-service teachers to integrate technology and measuring their knowledge on various TPACK constructs. The Theory of Planned Behavior has been used in teacher education to assess pre-service teachers’ intention to integrate technology. This study was conducted to examine a technology infusion intervention that took place within a large teacher’s college that infused technology instruction into methods coursework. The specific intervention provided technology devices, educational apps, and professional development to three student teaching cohorts, their mentor teachers, and the faculty members who supervised them. TPACK and TPB surveys were used to measure technology integration development and intention to integrate technology in student teachers’ future classrooms.”

**Date/Time:** Thursday, March 24, 10:15 – 10:45am

Linton, J., & Price, G. (2016, March). *Teaching technology integration: Learning*

*activity types and understanding by design to build TPACK*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48168/>

Abstract:

“Technology integration should be an ongoing negotiation rather than an afterthought. This session will facilitate the use of frameworks to integrate technology in purposeful lesson design and evaluate the usefulness of emerging technologies. Presenters will model the use of these frameworks, and participants will apply them to their own disciplines.”

**Date/Time:** Monday, March 21, 1:30-5:00pm

Lyublinskaya, I., & Tournaki, N. (2016, March). *Technological pedagogical content knowledge (TPACK): Can this type of knowledge transfer between settings?* Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/47947/>

Abstract:

“This study examined whether special education pre-service teachers’ TPACK, developed in a pedagogy course that prepared them to integrate technology into their mathematics and science teaching, transferred to their classroom teaching during their practicum course. TPACK scores of 61 participants who completed both courses were obtained from lesson plans that pre-service teachers completed and were scored using the TPACK Levels Rubric (Authors, 2012). The analysis indicated that on average there was a significant decline in TPACK scores during the practicum. Secondary analysis revealed that 37 of the participants did transfer their knowledge while 24 did not. Multiple regression analysis indicated that variables such as science and mathematics content knowledge, practicum course instructor, and number of semesters lapsed between the two courses were not significant predictors of change in TPACK scores from pedagogy course to practicum.”

**Date/Time:** Thursday, March 24, 4:45 – 5:15pm

Marcovitz, D., & Janiszewski, N. (2016, March). *Technology, models, and 21<sup>st</sup> century learning: How models, standards, and theories make learning powerful*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48071/>

Abstract:

"This paper describes the variety of educational technology models, how they all fall short in some ways, and how they can be used together to form a powerful integrative model that can be used to evaluate technology applications in the classroom. The integrative model is a tool to help teachers think about and improve their use of technology. It combines the best of various models, including SAMR, TPACK, Technology Integration Matrix, and more."

**Date/Time:** Tuesday, March 22, 12:10-12:30pm

Marich, H., & Greenhow, C. (2016, March). *Technology integration and teacher stages of concern categorized by TPACK knowledge types*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48283/>

Abstract:

"The Stages of Concern (SoC) framework (Hall & Hord, 1986) supports teacher change. The Technological Pedagogical Content Knowledge (TPACK) framework (Mishra & Koehler, 2005) articulates the multi-dimensional types of teacher knowledge required for teaching with technology. This paper presents a case study of 3 English Language Arts High School teachers learning to integrate Samsung Chromebook into their classrooms. Data revealed teachers' concerns according to the SoC and TPACK frameworks; concerns were concentrated around management and technological pedagogical topics. Concerns related to other topics, although expected, were absent. These findings suggest that providing a descriptive account of teacher concerns through both SoC and TPACK frameworks may help PD developers better address pedagogy and content-appropriate technology integration."

**Date/Time:** Thursday, March 24, 4:45 – 5:15pm

Mishra, P., Graves-Wolf, L., Gunnings-Moton, S., Seals, C., Mehta, R., Berzina, I., Pawlicki, D. (2016, March). *Reinventing TPACK, STEM teaching and leadership in an urban context*. Symposium conducted at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48066/>

Abstract:

"This symposium discusses the pedagogical make up and impact of the MSU-Wipro UrbanSTEM & Leadership Fellowship program on teacher practices, efficacy, and competence. We will describe our instructional approach, which uses the educative experience (Dewey, 1938) involving real world, hands-on engagement with technological devices, pedagogies, and teachers' relationships to STEM content. Our fellowship program is driven by TPACK (Technology Pedagogical Content Knowledge)

(Mishra & Koehler, 2006) framework. We will discuss curriculum and practices highlighting several teachers from program. Specifically, we will focus on their teaching experiences showcasing how they creatively integrate technology into their pedagogical practices, with an emphasis on creativity and aesthetics. Among the presenters in this symposium are the leaders of the project, members of the instructional and research teams from the university, and participants from Chicago Public schools.”

**Date/Time:** Wednesday, March 23, 3:00 – 4:00pm & 4:15 – 5:15pm

Mourlam, D. (2016, March). *Developing content methods faculty and teacher candidate technological, pedagogical, content knowledge through faculty development: Exploration of a design-based approach*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48128/>

Abstract:

“This study examined a design-based faculty development experience to determine if there were any positive increases in content methods faculty Technological, Pedagogical, Content Knowledge (TPACK), as well as if the instruction created through the faculty development experience resulted in any candidate TPACK development. Data on faculty TPACK was collected through a pre-post structured interview protocol, while a pre-post self-report survey was used to examine candidate TPACK. Data was analyzed using both descriptive and inferential statistics. Findings suggested positive increases in faculty TPACK domains, as well as statistically significant increases in some candidate TPACK domains. Implications resulting from this study are related to faculty development practices in teacher education programs with specific attention to content methods faculty.”

**Date/Time:** Thursday, March 24, 10:45 – 11:15am

Niess, M., & Gillow-Wiles, H. (2016, March). *Blending pedagogical examinations and discourse with teachers’ practical experiences for TPACK transformation*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/47671/>

Abstract:

“To assist in-service teachers in integrating technologies as mathematics learning tools, different course designs frame the relationship among the content, pedagogy, and technology. This study examined the influence of an online course on teachers’ technological pedagogical content knowledge (TPACK) for teaching mathematics with technology. An online instructional strategies course blends community-of-learners’ inquiries and collaborations with teachers’ practice and reflections as they design,

implement, and assess the impact of teaching with technologies in their classrooms. The examination reveals nine mathematics in-service teachers' TPACK transformations as they compiled Scoop Notebooks of their teaching and also engaged in community-of-learners' explorations, discourse, and reflective examinations of reform-based, student-centered instructional strategies. Implications highlight strategies for teacher professional development that influences transformations in their TPACK."

**Date/Time:** Friday, March 25, 2:15 – 2:45pm

Ntuli, E. (2016, March). *Effective instructional technology courses: Reflection on the changes implemented to enhance pre-service teachers' TPACK knowledge*. Virtual paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/47814/>

Abstract:

"This brief paper is based on the implementation of changes to an instructional technology course at one college of education. The piloted changes stem from a survey study which examined in-service teachers' perspectives of technology courses that were integrated in their program during teacher preparation and the extent to which the courses influenced the educators' technology competencies. In addition, the study explored in-service teachers' recommendations for technology courses offered in the programs at the time of training. A purposeful sample of forty five K-12 teachers participated. The paper offers feedback on the changes that were implemented in the technology course, specifically, revision of existing and addition of new assignments and activities were piloted. Qualitative feedback from teacher candidates, experiences and recommendations of one instructor during the implementation period are discussed."

Phillips, M, Koehler, M., & Rosenberg, J. (2016, March). *Looking outside the circles: Considering the contexts influencing TPACK development and enactment*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48106/>

Abstract:

"Technological pedagogical content knowledge (TPACK) is a well-known theoretical framework that has reshaped contemporary understanding of the interplay between forms of knowledge required by expert teachers. This paper draws on recent thinking and previously unpublished empirical data to shift the research focus to more closely examine the contexts in which TPACK is developed and enacted. In particular, this paper examines the way knowledge and activities of teachers are dialogically linked to the contextual conditions that surround them by considering teachers' knowledge, identity and practice as part of a sociocultural, situated context. Two conclusions result



from this work indicating the enactment of TPACK in a Community of Practice is not always consensual and that the reification of TPACK enactment in a Community of Practice is influenced by the power dynamics of its members. Finally, an elaborated model and suggestions for future research are presented.”

**Date/Time:** Thursday, March 24, 10:15 – 10:45am

Powers, J., & Musgrove, A. (2016, March). *Putting the “P” into TPACK: Using digital tools to design 21<sup>st</sup> century lessons*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48306/>

Abstract:

“Today’s educators are being introduced to new forms of instructional technology on a daily basis. This paper focuses on using the TPACK model as a framework to help undergraduate teacher education students create 21st century lessons using digital tools. The digital tools used to design technology-based lessons for a project based learning unit are presented and the pedagogical purposes for their selection are discussed.”

**Date/Time:** Thursday, March 24, 4:15 – 4:45pm

Rodney, B., Mahfood, S., & Witkowski, P. (2016, March). *Promoting preservice teacher resilience through a social media knowledge-building community of practice (CoP)*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48432/>

Abstract:

“This paper describes a study of a social media knowledge community designed to induct preservice teacher candidates into the unstructured domain of teaching. The goal of the analysis was to examine the development of TPACK and resilience among preservice teachers within a highly immersive entry experience course. The use of social media as a platform for developing teacher learning is viewed as a novel application for supporting teacher development. Surveys and content analyses of curated social media content offer data for the analysis. Findings from the study indicate that social media learning communities offer an engaging platform for knowledge building in the case of preservice teachers.”

**Date/Time:** Friday, March 25, 10:15 – 10:45am

Smith, D., Corbat, J., & Anderson, J. (2016, March). *Using the GIR coaching model with beginning and experienced teachers in TPACK science implementation*. Roundtable discussion hosted at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48083/>

Abstract:

“This study focuses on scaffolding support for beginning teachers in the implementation of the TPACK framework in 1:1 iPad elementary science classrooms. The Gradual Increase of Responsibility (GIR) model for teacher coaching (Collet, 2008) is used as the instructional coaching model of professional development. Through GIR, coaches model, make recommendations, ask probing questions, and affirm teachers’ decisions over the course of several months to increase the teacher’s independence in using technology to transform instruction for students.”

**Date/Time:** Wednesday, March 23, 11:30am -12:30pm

Sointu, E., Valtonen, T., Kukkonen, J., Kärkkäinen, S., Koskela, T., Pöntinen, S., ... Mäkitalo-Siegl, K. (2016, March). *Quasi-experimental study for enhancing pre-service teachers’ TPACK*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48148/>

Abstract:

“This study investigated how pre-service teachers’ knowledge to apply Information and Communication Technology (ICT) in education can be enhanced. Pre-service teachers (N = 115) were asked to design a lesson in teams as part of a course titled Education for Sustainable Development. Their lesson plans were evaluated by a team of educational experts within the framework of Technological Pedagogical Content Knowledge (TPACK). Based on their feedback, each team revised their lesson plan before implementing it outside the school context. The teachers’ TPACK scores were measured via pre- and post-tests. The results indicate increased knowledge in almost all areas of TPACK. Further research is needed in order to explore the transfer effects of the pre-service teachers’ TPACK to other contexts, as well as long-term learning effect. Additionally, there is a need to explore different ways to involve and engage pre-service teachers in their own learning process.”

**Date/Time:** Thursday, March 24, 1:45 – 2:15pm

Song, M. (2016, March). *A tale of two institutions: Technology integration and faculty development in two higher education settings*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from

<https://www.academicexperts.org/conf/site/2016/papers/47982/>

**Abstract:**

“This presentation compares faculty development professionals’ technology integration efforts in two different higher education settings, with the intention of supporting faculty’s online teaching and technopedagogical knowledge development. Success stories, challenges, solutions, and contributing factors such as institutional culture and organizational structure in both settings will be discussed. Participants will evaluate the approaches taken in those settings and walk away with approaches that may be helpful in their own contexts.”

**Date/Time:** Thursday, March 24, 11:30 – 11:50am

Spaulding, M. (2016, March). *Does a Web 2.0 based technology integration course develop TPACK ready preservice teachers?* Virtual paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/47940/>

**Abstract:**

“Today’s educational environment and ever changing landscape now involves more rigorous standardized testing and more accountability by both students and teachers. This research study sought to determine how much more prepared preservice teachers are to integrate Web 2.0 technology into their content after completing a technology integration course. It evaluated 73 preservice teachers’ responses to a 50-60 item survey. The survey, based on a 5-point Likert scale, evaluated how prepared preservice teachers were to utilize technology in their content area and how prepared they felt to teach after completing a technology integration course. Lastly it sought to determine the degree to which preservice teachers understand how technology affects pedagogy. Specifically, were they TPACK ready after completing a technology integration course. Results showed that they were indeed more TPACK ready as well as more prepared to use the Web 2.0 tools to better enhance their own specialty areas.”

**Date/Time:** Virtual paper available from <https://www.academicexperts.org/conf/site/2016/papers/47940/>

Tai, S-J. D., Dzekoe, R. (2016, March). *An English teacher’s learning journey to technology integration: A case study.* Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48532/>

**Abstract:**

“As literature indicates, teacher education interventions guided by TPACK-in-Action Model helped English teachers develop their TPACK and transform their knowledge relating to technology integration into teaching actions (Tai, 2015). The purpose of the study is to investigate how the technology for literacy course helped inservice teachers develop their Technological Pedagogical Content Knowledge (TPACK, Mishra & Koehler, 2006) and transform the knowledge into actions in their classes within the TPACK framework. Following the case study approach (Yin 2013) with three data sources, including course projects, observation, and interview, it was found that the technology for literacy course had a positive impact on the participant, Shannon. She not only developed her understanding of TPACK but also adopted and adapted what she learned in the course into her own teaching. Pedagogical implications were addressed and directions for future studies were also discussed.”

**Date/Time:** Thursday, March 24, 3:20 – 3:40pm

Tondeur, J., Roblin, N. P., van Braak, J., Voogt, J., Prestridge, S., Forkosh-Baruch, A., ...Albion, P. (2016, March). *Effective approaches to prepare future teachers for educational technology use*. Symposium conducted at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/49187/>

Abstract:

“Teacher training institutions are expected to prepare preservice teachers to integrate technology into their educational practice. However, several studies suggest that technology is often underused by preservice (eg. Mouza et al., 2014). There is a discrepancy between what preservice teachers are taught and how teachers use technology in a classroom (Ottenbreit-Leftwich et al., 2010). Therefore, Koehler and Mishra (2009) argued that TTIs should not only focus on how to use technology but also how technology intersects with PCK. Further research reveals that technology should be infused into the entire curriculum (Tondeur et al., 2012). However, the adoption of integrated approaches is a complex process that requires various strategies. Given this challenge, an important research question concerns the identification of effective strategies to prepare teachers for technology use. This symposium includes four studies that explore this research question from different perspectives.”

**Date/Time:** Thursday, March 24, 11:30am - 12:30pm

Trumble, J. (2016, March). *Internships and TPACK: The impact of student teaching on novice teachers' self-perceived TPACK*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/48197/>

Abstract:

“Preservice teacher education programs are the foundation of the future generations of teachers, and the pinnacle of beginning teacher training is the internship experience. A gap in educational literature exists in relation to the role of the internship experience in the development of preservice teachers’ understanding of teaching students to be prepared for a technology rich society through the integration of technology, pedagogy, and content. This mixed methods study surveyed 33 to examine the change in their self-perceived TPACK and their experience in relation to TPACK during the internship experience. It was determined that the effects of the internship experience were individualized and influenced by multiple factors.”

**Date/Time:** Wednesday, March 23, 3:40 – 4:00

van der Stap, N., Edwards, S., & van Bergen, H. (2016, March). *Ensuring effective flexible learning through blended learning*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/47805/>

Abstract:

“This paper discusses how Flexible Learning can be implemented through blended learning at the teacher trainer college of the University of Applied Sciences, Utrecht, Netherlands. To ensure quality blended learning programmes, it is essential that teachers developing blended learning courses are trained, particularly in relation to applied methodology. To understand how best to implement blended learning at the teacher trainer college extensive research was carried out, the findings of which were made available to the University’s teachers in the form of a content-based, yet hands-on blended training programme with TPACK as its exit point. The student results showed a marked improvement when following a blended learning course developed by teachers who were trained in the programme as compared to blended learning courses developed by non-trained teachers.”

**Date/Time:** Thursday, March 24, 12:10 – 12:30pm

Voogt, J., McKenney, S., Trimbo, B., Fasoglio, D., Fisser, P., Strijker, A., ... Crawford-Schmidt, D. (2016, March). *TPACK in language teaching: Implications for teacher education*. Symposium conducted at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/47978/>

Abstract:

“From the perspective that a teacher’s TPACK depends on the subject domain, the students and the ecology of the school and the classroom, this symposium intends to

contribute to a better understanding of TPACK in language teaching. We present four studies that discuss the meaning of TPACK as a knowledge base for teaching language with technology (mother tongue and modern foreign languages). Two contributions studied what the knowledge base for teaching with technology could be in respectively early literacy and modern foreign language teaching. Two contributions demonstrate how TPACK in language teaching can be developed in in-service and pre-service teachers.”

**Date/Time:** Friday, March 25, 10:15 – 11:15am & 11:30am – 12:30pm

Warner, M. (2016, March). *TPACK teacher preparation for elementary education*. Paper presented at the meeting of the Society for Information Technology and Teacher Education, Savannah, GA. Abstract retrieved from <https://www.academicexperts.org/conf/site/2016/papers/47889/>

**Abstract:**

“This paper presentation demonstrates how TPACK and problem-based learning are woven in the fabric of a successful teacher preparation course final project. As a final project, elementary education content area pedagogy students are required to work together in three person teams to produce a thematic unit that includes: (1) an authentic problem situation, (2) external links to student made research based graphic presentations providing social science, math, language arts, and science related information for children to assist with completing the tasks embedded in their problem situation, (3) an external link to a movie made by the various cohort groups using web 2.0 animation to provide more relevant information to introduce the essential questions concerning the problem presented, and (4) an external link to a United Streaming Discovery Channel video that also addresses and provides instructional insights into the problem situation.”

**Date/Time:** Friday, March 25, 1:45 – 2:15pm

**Editors’ Note:** *The 45 SITE 2016 sessions listed above are those that appear to address TPACK directly and prominently, based upon the contents of their online abstracts. Descriptions of additional sessions that list TPACK as one of multiple descriptors can be viewed here:*

<https://www.academicexperts.org/conf/site/2016/schedule/>

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## AERA 2016 TPACK-Related Presentations

Alexander, A. B., Chesnutt, K., Behrle, C., & Wiebe, E.N. (2016, April). *Creating efficacious learning ecologies: The role of teacher orchestration within a digital learning environment*. Paper presented at the meeting of the American Educational Research Association, Washington, D.C. Abstract retrieved from <http://tinyurl.com/jarq9tt>

### Abstract:

“The rise of access to technology in the elementary science classroom has led to research on effective teacher-technology integration strategies for creating learning ecologies. Using the orchestration framework coupled with TPACK as a lens into teacher abilities, data from six teachers were collected. Teachers were gauged for their success in driving the arranging and conducting phases of orchestration during classroom use of the CyberPad digital science notebook. The criteria that best predicted orchestration success was previous experience with the CyberPad tool and mastery of the science content knowledge it presented. These findings have implications for both teacher professional development and the creation of successful student learning environments.”

**In Session:** Technology as an Agent of Change in Teaching and Learning  
**Scheduled Time:** Tue, April 12, 8:15 – 9:45am  
**Building/Room:** Convention Center, Third Level – Ballroom B

Baert, H., & Madden, M. D. (2016, April). *Using technology in physical education to enhance learning and inform practice*. Paper presented at the meeting of the American Educational Research Association, Washington, D.C. Abstract retrieved from <http://tinyurl.com/hc6y2fx>

### Abstract:

“In this case, researchers were interested in the factors and theoretical underpinnings that influenced a teacher’s need for change or more specifically, the extent to which technology was used to change a teacher’s practice and beliefs (Fullan, 2007).

Three discipline experts connected a teacher’s narrative to three different theoretical frameworks: educational change, humanistic theory, and self-determination theory. The Technological, Pedagogical and Content Knowledge (TPACK) framework was used to further discuss the process of technology integration as described in the teacher’s narrative. Finally, the teacher reflected on the discussions provided by each respondent.”

**In Session:** Research on Learning and Instruction in Physical Education  
**In Symposium:** Digital Technologies and Learning in Physical Education: Pedagogical Cases.  
**Scheduled Time:** Mon, April 11, 7:45 – 9:45am

**Building/Room:** Convention Center, First Level – Room 144 C

Courduff, J. (2016, April). *Exemplary technology integration in diverse teaching and learning environments: A grounded theory*. Paper presented at the meeting of the American Educational Research Association, Washington, D.C. Abstract retrieved from <http://tinyurl.com/h4a92et>

Abstract:

“The purpose of this systematic grounded theory study was to extend the theoretical foundations of the technology acceptance model (TAM) and the technology pedagogy content knowledge model (TPACK) to generate a theoretical model explaining the process leading to exemplary integration of technology into the diverse learning environments. Data were collected through demographic surveys, interviews, and observations of a purposeful selection of participants. Final analysis revealed a cycle of components leading to teachers’ technology implementation: (a) opportunities / small steps, (b) pedagogical beliefs / dispositions, (c) structure, and (d) disregard for obstacles. While skill and knowledge levels were salient themes, underlying these themes were key beliefs and dispositions that proved foundational in leading to exploration and exemplary integration of technology.”

**In Session:** Special Education Research: Multimedia Interventions

**Scheduled Time:** Fri, April 8, 4:05 – 5:35pm

**Building/Room:** Convention Center, First Level – Room 159 B

Hamilton, C. (2016, April). *Investigating the technological pedagogical content knowledge (TPACK) of university teacher educator faculty*. Poster presented at the meeting of the American Educational Research Association, Washington, D.C. Abstract retrieved from <http://tinyurl.com/j5foc82>

Abstract:

“The purpose of this study was to expand literature of TPACK by investigating the perceived TPACK of university faculty in teacher education and their demographics. The survey instrument used was the Survey of Teacher Educators’ Technological Pedagogical Content Knowledge (STE-TPACK) which is a modified version of the Survey of Preservice Teachers Knowledge of Teaching and Technology. In summary, 347 teacher educators from 76 public universities in Texas participated in the online study (46% response rate). When considering the effect size and practical significance, the overall results of this study revealed a significant negative correlation in the technology knowledge of the university faculty and their age. The results suggest, as age increases, TK decreases and conversely, as age decreases, TK increases.”

**In Session:** Instructional Technology SIG Poster Session

**Scheduled Time:** Sat, April 9, 2:15 – 3:45pm

**Building/Room:** Convention Center, Second Level – Exhibit Hall D



Leshem, B., & Ungar, O. A. (2016, April). *Faculty usage of the active learning classroom: Model of teaching and learning styles*. Paper presented at the meeting of the American Educational Research Association, Washington, D.C. Abstract retrieved from <http://tinyurl.com/jjslffw>

**Abstract:**

“The study examines teachers' perceptions towards new pedagogy among college professors, after one year experience in a new Active Learning Classroom (ALC), designed for ICT enhanced teacher training. Data was collected via structured personal interviews. Mixed qualitative and quantitative analysis was used in order to recognize and classify teaching patterns, usage of pedagogical and technological innovations and barriers/facilitators to teacher ALC usage. The relationships between teaching patterns, demographic factors and professional factors were examined using TPACK framework as an underlining model. Data analysis identified four teaching patterns related to TPACK sub-forms and recognized a correlation between ALC usage frequency and teacher choices of pedagogical and technological traits in the classroom.”

**In Session:** Support Strategies for Student Learning and Development  
**Scheduled Time:** Sat, April 9, 2:15 – 3:45pm  
**Building/Room:** Convention Center, First Level – Room 158 B

Mishra, P., Graves, L. G., Gunnings-Moton, S., Seals, C., Berzina-Pitcher, I., & Mehta, R. (2016, April). *Enhancing urban teachers' STEM, technological, and leadership capacities through innovative instructional practices*. Paper presented at the meeting of the American Educational Research Association, Washington, D.C. Abstract retrieved from <http://tinyurl.com/jtmq7mo>

**Abstract:**

“The MSU-Wipro UrbanSTEM & Leadership fellowship program was formed to enhance teaching and leadership capacities of teachers in a large urban school district. The program is built on Technical and Pedagogical Content Knowledge (TPACK) framework (Mishra & Koehler, 2006) and its instructional approach uses the power of experience (Dewey, 1938) involving real world engagement with tools and pedagogies in STEM constructs. The effectiveness of the program was measured using a mix of quantitative and qualitative methods. Utilizing a repeated measures design, we evaluated the impact of the program on the teacher participants to develop a classroom experience that enhances learning. We found a significant difference in teacher efficacy, educational leadership, and the integration of technology into classroom practices.”

**In Session:** Supporting Technology Integration through Professional Development  
**Scheduled Time:** Sun, April 10, 10:35 – 12:05pm  
**Building/Room:** Marriott Marquis, Second Level, Marquis Salon 13

Ozden, S. Y., & Mouza, C. (2016, April). *Designing and validating a survey to measure technological pedagogical content knowledge among preservice teachers*. Paper presented at the meeting of the American Educational Research Association, Washington, D.C. Abstract retrieved from <http://tinyurl.com/hfaxds2>

**Abstract:**

“This study presents the development of a survey to measure pre-service teachers’ Technological Pedagogical Content Knowledge (TPACK). The survey was designed considering the transformative approach to the TPACK framework and was vetted by professionals in the field. It was administered to 124 pre-service teachers within the context of an educational technology course at a Mid-Atlantic University. In order to investigate the construct validity and reliability of the survey, an exploratory factor analysis (EFA) was conducted. EFA results revealed a two-factor solution: Knowledge of Technology and Knowledge of Teaching with Curriculum Based Technology. Findings provide support for the transformative approach to examining TPACK and have implications for researchers and teacher preparation programs.”

**In Session:** Teacher Knowledge and Technology Professional Development  
**Scheduled Time:** Tues, April 12, 10:35 – 12:05pm  
**Building/Room:** Marriott Marquis, Fourth Level – Treasury

Phillips, M. (2016, April). *Contextual factors influencing teachers’ technological, pedagogical, and content knowledge enactment*. Roundtable discussion hosted at the meeting of the American Educational Research Association, Washington, D.C. Abstract retrieved from <http://tinyurl.com/zjmq6v>

**Abstract:**

“Technological, pedagogical and content knowledge (TPACK) has been widely used as a theoretical framework to explore teachers’ technology use in classroom settings. While these studies have contributed to understandings of the interplay between these different knowledge domains, little work has been done to examine the influence of teachers’ workplace settings on TPACK enactment. This paper begins to address this issue reporting findings from a study involving ten teachers in an Australian secondary school. Results indicate that TPACK enactment is influenced by processes of identity development and practice. These findings challenge the established position of knowledge as an epistemological possession inherent in the TPACK framework rather than also considering knowing as an epistemology of practice.”

**In Session:** Teaching Contexts and Teacher Agency: Examinations of the Contextual Factors That Impact Teacher Learning and Practice.  
**Scheduled Time:** Fri, April 8, 12:00 – 1:30pm  
**Building/Room:** Convention Center, Third Level – Ballroom A

Rae, D., & Nadelson, L. S. (2016, April). *The impact of STEM professional development: K-12 teacher progression identified in technology, pedagogy, and content knowledge assessment*. Paper presented at the meeting of the American Educational Research Association, Washington, D.C. Abstract retrieved from <http://tinyurl.com/zngqzpz>

**Abstract:**

“Our study examined the relationship between K12 teachers’ STEM (science, technology, engineering, and mathematics) instructional technology knowledge before and after a four-day professional development summer institute. In 2014, a total of 533 K12 teachers, across six Idaho regional locations, participated in a professional development institute. Through this research, we hoped to determine if STEM-focused professional development led to shifts in teacher instructional technology knowledge and practice, as defined by the TPACK (Technology Pedagogy and Content Knowledge) assessment. Our research provides insight into teachers’ perceptions of integrating instructional technology to teaching mathematics and science, which may be useful for informing teacher professional development and the status of teacher instructional technology practices.”

**In Session:** Professional Development in the STEM Areas  
**Scheduled Time:** Mon, April 11, 11:45 – 1:15pm  
**Building/Room:** Convention Center, Second Level – Exhibit Hall D Section D

Reyes, A., Morton, T. R., Comperatore, A. N., Freeman, E., Minshew, L., & Anderson, J. (2016, April). *Technology integration into pedagogical practice: Analysis of a one-on-one and group coaching model of professional development*. Roundtable discussion hosted at the meeting of the American Educational Research Association, Washington, D.C. Abstract retrieved from <http://tinyurl.com/jbkz3pl>

**Abstract:**

“This study explores an inquiry-based, content specific professional development (PD) experience coupled with one-on-one modeling/ coaching sessions to help middle school science teachers improve their integration of technology into their pedagogical practice. Researchers conducted case studies and analyzed teachers’ understanding and shifts in knowledge using the Technological Pedagogical Content Knowledge (TPACK) framework and Replacement, Amplification, Transformation (RAT) model. After participating in the PD experience, results showed teachers demonstrated a slow progression towards an increase in their TPACK knowledge as well as a delayed shift in the RAT model. Implications for an integrative approach towards improving teachers’ understanding and use of technology into their everyday pedagogy are provided.”

**In Session:** Coaching and Facilitation in Professional Development  
**Scheduled Time:** Sat, April 9, 8:15 – 9:45am  
**Building/Room:** Convention Center, Second Level – Exhibit Hall D, Section D

Slota, S., & Young, M. F. (2016, April). *Renovating the castle: Game design through the technology, pedagogy, content knowledge, and learning theory (TPACK-L) framework*. Paper presented at the meeting of the American Educational Research Association, Washington, D.C. Abstract retrieved from <http://tinyurl.com/h6gpmjc>

**Abstract:**

“Commercial and educational game developers frequently draw upon the same principles of problem-based instruction to create cooperative, engaging, and “fun” gamespaces. Yet, there is little information about the way game mechanics and peripheral tools (e.g., forums, cheat guides, mods) influence the skills needed to be a successful 21st century learner. In response, data collected from in-game interactions of 14 practicing educators were used to conduct a qualitative grounded theory analysis of a text-based alternate reality/roleplaying game developed under a situated cognition, Technology, Pedagogy, Content Knowledge, and Learning Theory (TPACK-L) framework. Findings suggest that TPACK-L, combined with the ADDIE instructional design model, may have multiple affordances for iterative design and the alignment of commercial and educational game developer goals.”

**In Session:** Game Design and Game-Based Learning  
**Scheduled Time:** Sun, April 10, 8:15 – 10:15am  
**Building/Room:** Marriott Marquis, Second Level – Salon 13

Szabo, M. R. (2016, April). *Defining and refining our concerns through the self-study of educational technology and design*. Roundtable discussion hosted at the meeting of the American Educational Research Association, Washington, D.C. Abstract retrieved from <http://tinyurl.com/hb7hjsz>

**Abstract:**

“The purposes of this collaborative self-study were to describe our teaching in Educational Technology and Design with the framework of Technological Pedagogical Content Knowledge (TPACK) and to discover and refine our concerns to improve our teaching. Our data collected in one year were comprised of our critical discussion records, class observation notes, videos of our teaching, microanalysis of the videos, candidates’ TPACK survey, and our reflection writing. We report our findings with three levels of our concerns emerged in the self-study process: 1) integration of technology, pedagogy, and content knowledge; 2) candidates’ ownership of their learning; 3) course fidelity versus better teaching practice. Implications for other teacher educators address the applicability of the TPACK framework and our process-oriented collaborative self-study.”

**In Session:** Using Self-Study to Contemplate Technology in Teacher Education  
**Scheduled Time:** Tues, April 12, 10:35 – 12:05pm

**Building/Room:** Convention Center, Third Level – Ballroom B

Xie, K., Lu, L., Cheng, S.-L., & Kim, M. K. (2016, April). *Technology professional development on catalyst teachers through a blended approach*. Paper presented at the meeting of the American Educational Research Association, Washington, D.C. Abstract retrieved from <http://tinyurl.com/zn4gvh8>

**Abstract:**

“This mixed-method study investigated teachers’ experience in a one-year technology professional development program with foci on TPACK, blended learning, and a community of catalyst teachers. The findings suggest that this model of technology professional development were effective to improve teachers’ TPACK and maintain their motivation for technology integration. The blended approach provided a flexible, accessible, situated and self-paced PD experience for teachers. A community of catalyst teachers was formed. The sense of community, collaborations, and leadership identity were especially meaningful components of teachers’ experience in this PD program.”

**In Session:** Teacher Knowledge and Technology Professional Development  
**Scheduled Time:** Tue, April 12, 10:35 – 12:05pm  
**Building/Room:** Marriott Marquis, Fourth Level – Treasury

Xie, K., Cheng, S.-L., Kim, M. K., & Luthy, N. C. (2016, April). *How teachers learn and become competent via the evaluation of digital materials*. Paper presented at the meeting of the American Educational Research Association, Washington, D.C. Abstract retrieved from <http://tinyurl.com/guv98h6>

**Abstract:**

“In this study we designed and implemented a one-year professional development program that focused on evaluating digital content. 171 teachers from 5 schools districts across central Ohio participated in this study. The results revealed that teachers’ TPACK and self-efficacy increased across time during the PD program, suggesting that training teachers on evaluating digital content can be an innovative and effective PD model to improve teachers’ TPACK as well as their self-efficacy. This training model was especially effective for teachers with less prior experience in technology integration or related training. However, teachers’ motivation decreased over time. Qualitative analyses revealed requirements needed for successful PD.”

**In Session:** Supporting Technology Integration through Professional Development  
**Scheduled Time:** Sun, April 10, 10:35 – 12:05pm  
**Building/Room:** Marriott Marquis, Second Level, Marquis Salon 13

Zambak, V. S., & Tyminski, A. (2016, April). *Construction of an analytical framework to explore prospective teachers' technological content knowledge for geometry*. Paper presented at the meeting of the American Educational Research Association, Washington, D.C. Abstract retrieved from <http://tinyurl.com/jd4n23l>

**Abstract:**

“With the emergence of new instructional technologies, prospective mathematics teachers (PSTs) are expected to develop principles of learning mathematics with technologies. Consequently, teacher education programs provide courses rich in technology experiences to PSTs to equip them with required knowledge. Technological Pedagogical Content Knowledge (TPACK) was one of the frameworks that identify the nature of knowledge required for technology integration in teaching content. One TPACK component is Technological Content Knowledge (TCK), which was defined in this study as knowledge to use technological affordances while doing mathematics. This study examined 16 middle grade PSTs' TCK development within a geometry course where they used Geometer's Sketchpad. This case study resulted in an analytical framework that can be used to assess PSTs' TCK development.”

**In Session:** Preservice Mathematics Teachers' Knowledge and Understanding  
**Scheduled Time:** Tue, April 12, 8:15 – 9:45am  
**Building/Room:** Convention Center, Third Level – Ballroom A

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## ISTE 2016 TPACK-Related Presentations

Alaniz, C., Pendleton, L., & Watson, N. (2016, June). *Tech it better: Best practices in technology professional learning*. Workshop session conducted at the meeting of the International Society for Technology in Education, Denver, CO. Abstract retrieved from [https://conference.iste.org/2016/program/search\\_session\\_detail.php?id=100234430](https://conference.iste.org/2016/program/search_session_detail.php?id=100234430)

### Abstract:

“The purpose of this session is to provide educators with a model to purposefully integrate technology while addressing ISTE Standards in professional learning sessions. The objective is to connect technology integration models, such as TPACK and SAMR, with the framework of Understanding by Design and the ISTE Standards to improve lesson design for adult learning as well as student learning. Participants will be self-paced and have choice while exploring the technology integration models and the UbD framework. They will receive a lengthy list of effective educational technology tools, brainstorm ways to utilize the tools and resources, and reflect upon opportunities to share their knowledge to build capacity.”

**Theme/Strand:** Professional Learning – ISTE Standards

**Audience:** PK-12 teachers

**Date/Time:** Monday, June 27, 5:45 - 7:15pm

Allen, M., Anderle, K., & Miller, H. (2016, June). *Flipping for professional development*. Poster presented at the meeting of the International Society for Technology in Education, Denver, CO. Abstract retrieved from [https://conference.iste.org/2016/program/search\\_session\\_detail.php?id=100480623](https://conference.iste.org/2016/program/search_session_detail.php?id=100480623)

### Abstract:

“To demonstrate how flipping professional development can help technology coaches and teachers leverage time, and resources available to them, and differentiate for the various learning styles found among teaching staff.

### Objectives:

1. Participants will gain an understanding of the benefits and best practices of flipping PD.
2. Participants will gain an understanding of how the flipped classroom works in relationship to the SAMR model and TPACK model
3. Participants will observe and interact with a demonstration of a flipped PD videos.
4. Participants will gain an understanding of some of the tools needed for creating and sharing flipped videos.
5. Participants will be able to watch a sample and ask questions about video creation.”

**Theme/Strand:** Professional Learning – Learning Models  
**Audience:** Teacher Educators/Higher Ed Faculty, Teachers  
**Date/Time:** Tuesday, June 28, 4:00 – 6:00pm

Hintz, P. (2016, June). *The gamification of technology professional development*. Workshop session conducted at the meeting of the International Society for Technology in Education, Denver, CO. Abstract retrieved from [https://conference.iste.org/2016/program/search\\_session\\_detail.php?id=100543048](https://conference.iste.org/2016/program/search_session_detail.php?id=100543048)

Abstract:

“Ever wonder why technology professional development goes over teachers, particularly ones who are techno-phobic, like a lead balloon? Teachers often feel too overwhelmed if you pull them out for a 1/2 day inservice, and if you try to offer it after school hours, they are just too busy to put the extra time in. In Gurnee School District 56, we have not only met that challenge, but we have conquered it! In this session, we will share proven, working strategies to present technology professional development that will leave your teachers begging for more. So much so, that our teachers have now gained a valuable tool set that has proven to raise student achievement in the classroom, as well as rewards them for sharing what they learned with others. Many teachers are now employing the same method of gamification that they have participated in, into their own methods of teaching.”

--Concept and Introduction to SAMR and TPACK--45 minutes  
--Concept of Gamification of learning--30 minutes  
--The D56 Tech Trek--45 minutes  
--The Evaluation and Assessment of Gamification--30 minutes  
--What's next and where do we go from here? How to extend this concept to meet the needs of your entire district.--30 minutes.”

**Theme/Strand:** Professional Learning – Learning Models  
**Audience:** PK-12 teachers  
**Date/Time:** Monday, June 27, 8:30 – 11:30am

Hoffmann, M., & Shaw, K. (2016, June). *Mentoring with teachers and teacher educators on TPACK integration*. Poster presented at the meeting of the International Society for Technology in Education, Denver, CO. Abstract retrieved from [https://conference.iste.org/2016/program/search\\_session\\_detail.php?id=100558370](https://conference.iste.org/2016/program/search_session_detail.php?id=100558370)

Abstract:

“The purpose of this session is to provide a solid model and support system to integrate TPACK in education for teachers and/or teacher educators. Through modeling of proper TPACK teaching, future instruction can be improved. Participants will learn specific



technology tools to integrate into the appropriate subject matters. They will also learn how to form their own TPACK Mentorship coalition at their own schools to have the support they need to transform teaching at a larger level than just an individual's classroom. The educational challenge is that many educators see technology as something added to their plate, rather than a different way of doing things. These challenges can be overcome with proper mentorship and support. The technology interventions will share a variety of technology teaching tools blended with the appropriate pedagogies and content areas. A model for forming teacher mentorships to integrate TPACK will be provided. Experiences will be shared with lessons learned and steps for forming a mentor coalition. Resources will be provided via a website, posters, and interactive discussion. Evidence of success is ongoing, constant reassessment and adjustments are being made and will continue into the future. Participants may use the presenter as a coach through the process at their schools as well."

**Theme/Strand:** Professional learning – Teacher Education  
**Audience:** Teacher Educators/Higher Ed Faculty  
**Date/Time:** Tuesday, June 28, 4:00 – 6:00pm

Kyamanywa, P., Mock, N., & Papendieck, A. (2016, June). *Grassroots and global: A blended approach to university faculty development in Rwanda*. Poster session presented at the meeting of the International Society for Technology in Education, Denver, CO. Abstract retrieved from [https://conference.iste.org/2016/program/search\\_session\\_detail.php?id=100401826](https://conference.iste.org/2016/program/search_session_detail.php?id=100401826)

Abstract:

"We describe a contextually responsive approach to faculty development at the University of Rwanda. Local and international facilitators were paired for blended, certificate-bearing workshops aligned with ISTE standards. Programming was informed and adapted and via a multimethod approach incorporating a novel SMS-based feedback system. Lessons learned are summarized."

"OUTCOMES: (1) Understand how global standards can be contextualized for the design of locally relevant PD programming via a process of participatory design. (2) Understand how the blended approaches to PD which integrate OER and globally-distributed facilitators were used to develop technological pedagogical content knowledge (TPACK) among teachers in Rwanda. (3) Understand how mobile and web technology can be used for lightweight formative assessment, impact evaluation and continuous program improvement. (4) Understand the potential of SMS-based beneficiary feedback systems like UNICEF's RapidPro for responsive educational development programming."

**Theme/Strand:** Professional Learning – Online (Science)  
**Audience:** Teacher Educators/Higher Ed Faculty

**Date/Time:** Sunday, June 26, 7:00 - 8:30pm

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### **Standard End-Matter**

If you have questions, suggestions, or comments about the newsletter, please send those to [tpack.news.editors@wm.edu](mailto:tpack.news.editors@wm.edu). If you are subscribed to the tpack.news email list, and — even after reviewing this impressive publication — you prefer not to continue to receive the fruits of our labors, please send a blank email message to [sympa@lists.wm.edu](mailto:sympa@lists.wm.edu), with the following text in the subject line: unsubscribe tpack.news

- Judi & Kim

...for the SITE TPACK SIG leadership:

<a href="#">Petra Fisser</a> ,	Chair, SLO Expertise Center, National Curriculum Development
<a href="#">Josh Rosenberg</a> ,	Associate Chair, Michigan State University
<a href="#">Candace Figg</a> ,	Rocking Chair, Brock University
<a href="#">Mark Hofer</a> ,	Sedan Chair, College of William & Mary
<a href="#">Judi Harris</a> ,	Wing Chair, College of William & Mary
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