![iNACOL — International Association for K-12 Online Learning]

Partnering for Success:
A 21st Century Model for Teacher Preparation

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iNACOL
International Association for K-12 Online Learning

The mission of the International Association for K-12 Online Learning (iNACOL) is to ensure all students have access to a world-class education and quality blended and online learning opportunities that prepare them for a lifetime of success. iNACOL is a non-profit organization focused on research; developing policy for student-centered education to ensure equity and access; developing quality standards for emerging learning models using online, blended, and competency-based education; and supporting the ongoing professional development of classroom, school, district and state leaders for new learning models. **Learn more at www.inacol.org.**

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Foreword

As advanced technologies enter the mainstream of everyday life, more than half of K-12 school districts are already offering — or interested in starting — blended and online learning programs.

With the addition of modern tools and resources, what school looks like today — and how classroom teachers teach — changes dramatically. There are human capital issues around making sure teachers are skilled in managing the educational process for students: part concierge (expanding resources through digital content and tools) and part coach or guide, providing improved instructional approaches that are student-centered and personalized for each student's needs and interests.

This naturally leads to asking our teacher preparation programs to modernize and adapt to these new realities. Programs that provide teacher licensure preparation must be responsible for training today's teaching workforce for today's educational needs, not yesterday's "one classroom, one textbook" model of lecture learning — continuously modernizing skills, methods and strategies to ensure a new generation of teachers are successful with a new generation of students.

New school models are evolving that measure individual achievement based on each student's learning needs using data, a wider range of academic content choices, new teaching methods, tools, platforms and resources to offer services that are not one-size-fits-all. Rather, they are customized for each child. It is only reasonable that educators seeking to enter into these emerging learning environments should have their training supplemented by practical experience using the tools, techniques and pedagogy inspired by and required for successful teaching (and learning) within digital learning environments.

However, a national survey of teacher education programs conducted in 2012 found that a paltry 1.3% of them were preparing their teachers for next generation learning models.[i] That survey and subsequent studies have identified the need for a dramatic shift in the skills and methods for educator preparation toward next generation learning models, which require many of the same skills as traditional education, yet a more comprehensive set of skills to navigate a diverse range of learning environments — including blended, online, competency-based models emerging in anytime, everywhere traditional classrooms and schools.

Too few educator and leadership preparation programs are up to the task of modernized teacher training for the 21st century. A bright spot, however, has been the growing number of innovative teacher preparation programs that have formed partnerships with blended and online schools around the country.

As they did in their book *Lessons Learned in Teacher Mentoring*, Drs. Archambault and Kennedy uncover and explore those developing best practices in innovative teacher preparation for next generation learning environments so the field can build upon the work of these pioneering leaders.

This report studies the best practices necessary to rethink the skills, methods and pedagogical evolution that teacher education must address. If we are to ensure great teachers are trained, mentored and retained for our students — the programs themselves must emulate 21st century skills for individualized student learning — no matter where or how a student learns best. The examples found in this report have unique elements and frameworks that others may learn from and replicate.

No teacher should start their career with anything less than complete confidence that they have been effectively prepared for Day One. The partnerships highlighted here are poised to make that a reality and provide guideposts to rethinking and modernizing educator preparation programs for today's schools.

Susan Patrick
President and CEO, iNACOL

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i   Kennedy, K., & Archambault, L. (2012). Offering pre-service teachers field experiences in K-12 online learning: A national survey of teacher education programs. *Journal of Teacher Education*, 63(3), 185-200.

Introduction

FIELD EXPERIENCES ARE THE LEARNING ENVIRONMENTS IN WHICH PRE-SERVICE AND IN-SERVICE TEACHERS ARE PLACED TO GET THE HANDS-ON EXPERIENCE THEY NEED TO SUCCEED IN THE EDUCATION SYSTEM. These practical experiences are a key part of teacher professional development (Feiman-Nemser, 2001). Recent research has suggested that practica experiences in online schools are important as well (Archambault, 2013; Kennedy & Archambault, 2012; Compton & Davis, 2010; Compton, Davis, & Mackey, 2009; Davis, Compton, & Mackey, 2009). Paving the way for field experiences in online schools was Iowa State University under their Fund for the Improvement of Post Secondary Education (FIPSE) Grant. Born out of this grant was the TEGIVS project, Teacher Education Goes Into Virtual Schooling (Davis, Roblyer, Charania, Ferdig, Harms, Compton, & Cho, 2007). In a 2009 presentation at the Society for Information Technology and Teacher Education (2009), Davis, Compton, and Mackey (2009) questioned, "How can it [field experience with a Virtual School Teacher] be done?"

ISU offered its first online school field experience in fall 2007 (Compton et al., 2009). This field experience was conducted between ISU and Iowa Learning Online. It matched two pre-service teachers with one online school teacher. The pre-service teachers were enrolled in a one-credit course that allowed them to work with the online school teacher via guided observation and with the online K-12 students via virtual interactions. The pre-service teachers used reflection journals, discussion forums, and interviews to reflect on their practicum experience. Via the study and their involvement in the online school field experience, the pre-service teachers experienced a growth of understanding about online schooling and formed new personal theories regarding K-12 online learning.

In addition to ISU, the University of Central Florida (UCF) began offering their pre-service teachers online school field experiences in spring 2009 through the Florida Virtual School, and their current status is highlighted in this report. The University of Florida also worked with the Florida Virtual School to offer their pre-service teachers online school field experiences starting in Spring 2009. Their program was a four-week long experience where pre-service teachers were matched with online school teachers in a one-to-one format. The pre-service teachers were given access to their supervisor teacher's course. Since this time, additional undergraduate as well as graduate programs have started offering coursework and field experiences to prepare future K-12 online teachers.

Understanding how pre-service and in-service teachers experience their online school practica is important to educational research because it is important to contextualize how field experience translates in an online school. It also informs teacher educators and policy makers about the importance of offering diverse learning opportunities for future teachers as well as giving teachers the chance to learn what it is like to teach online. This report presents seven case studies of online school practica and offers insight to where we go from here as researchers in the preparation of teachers for blended and online instruction.

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Director of Research, iNACOL

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Boise State University and Idaho Digital Learning Academy

by Kerry Rice and Dazhi Yang

History of the Program

The Department of Educational Technology (Edtech), a graduate program within the College of Education at Boise State University, has been preparing K-12 teachers to teach online since 2006. Beginning with an introductory course in K-12 online teaching methods, the program quickly expanded its offerings to include a twelve-credit, K-12 online teaching certificate. In 2011 the state of Idaho officially legislated a K-12 online teaching endorsement, and Edtech became a statewide-approved program provider the same year.

The Edtech program worked closely with the Idaho State Department of Education to develop and establish both the statewide K-12 Online Teaching Standards and the K-12 Online Teaching Endorsement. The Idaho K-12 Online Endorsement is based on the Idaho K-12 Online Teaching standards approved in 2011 for inclusion in the Idaho Standards for the Initial Certification of Professional School Personnel. These standards require that teacher candidates for the endorsement meet the standards specific to their discipline area(s) in addition to meeting Idaho's Core Teacher Standards, which are basic standards for any licensed teacher in the state of Idaho. Each of the following standards includes detailed knowledge and performance statements, which can be viewed in their entirety at (http://edtech.boisestate.edu/idaho-k-12-online-teaching-endorsement-program/):

Standard #1: Knowledge of Online Education

Standard #2: Knowledge of Human Development and Learning

Standard #3: Modifying Instruction for Individual Needs

Standard #4: Multiple Instructional Strategies

Standard #5: Classroom Motivation and Management Skills

Standard #6: Communication Skills, Networking, and Community Building

Standard #7: Instructional Planning Skills

Standard #8: Assessment of Student Learning

Standard #9: Professional Commitment and Responsibility

Standard #10: Partnerships

The Idaho K-12 Online Teaching Endorsement is competency-based, requiring up to 20 credit hours of approved coursework with the option to combine coursework with other relevant experience including professional experience and/or workshop training. The endorsement requirements include qualification to teach state standards but also evidence of online experience both as a teacher and learner, demonstrated online learning proficiency, one year of verifiable teaching experience, and completion of a state-approved and accredited program.

Current Status of the Program

In August 2011, the Edtech program became a state approved K-12 Online Teaching Endorsement provider in the state of Idaho. The program was able to build on its existing infrastructure of courses aimed at training K-12 online teachers; consequently, the program was quickly implemented. The K-12 online endorsement program includes courses that allow students to build the necessary skills and gather artifacts as evidence of competency in meeting the state standards for online teachers, as well as demonstrate proficiency in the following areas: online education and human development, facilitating and inspiring student learning and creativity, designing and developing digital-age learning experiences, promoting digital citizenship, and actively engaging in professional growth and leadership. Sample courses in this graduate level endorsement that allow teacher candidates to build the necessary skills and gather artifacts as evidence of competency include the following:

EDTECH 502**: Internet for Educators (3 credits)

Locate, retrieve, and evaluate information found on the Internet. Design and produce instructional Web pages using a combination of software and HTML/XHTML/CSS code. Apply appropriate instructional strategies and models to the design of digital curriculum.

EDTECH 504: Theoretical Foundations of Educational Technology (3 credits)

An overview of classic and contemporary theories of learning along with their applications in the field of educational technology and emerging orientations; Implications for practice.

EDTECH 512*: Online Course Design (3 credits)

Emphasizes web-based instructional design for the development of online courses. Consideration is given to various models of online delivery, content organization and presentation, and graphic design. Course participants create a fully-developed online course.

EDTECH 521*: Teaching Online in the K-12 Environment (3 credits)

Examines research-supported practices in online teaching and learning in the K-12 environment. Emphasizes online teaching tools, caseload management, learner engagement, and individualized instruction. Project required.

EDTECH 523*: Advanced Online Teaching (3 credits)

Emphasizes content-specific instructional strategies, methods, data analysis, and improved communication in online instruction. Experience with web-based video/audio communication tools recommended.

EDTECH 597: Social Network Learning (3 credits)

This graduate level course will explore collaborative and emergent pedagogies, tools, and theory related to the use of social networks in learning environments. Participants will gain hands-on experience with a variety of social networking tools, create a community-based resource, and have an opportunity to develop a global professional network for educational technologists.

EDTECH 597: Internship (2 credits)

Eight-week online teaching internship in a Pre-K-12 online school or program. Students will participate in a hands-on field experience for the purpose of observing the effective management and instruction of learning in a fully online environment.

*Indicates required courses for the previously approved 12-credit Online Teaching Certificate offered through the Department of Educational Technology.

**Recommended course for the Online Teaching Certificate for students who are not enrolled in the Master's of Educational Technology graduate program.

In the spring of 2012, the program was able to offer the K-12 Online Teaching Endorsement immediately to currently enrolled students who had fulfilled the coursework and had prior experience teaching in an online school. Two teacher candidates applied for recommendation and were subsequently endorsed to teach online in the state of Idaho.

This first iteration of the endorsement is reminiscent of more traditional state level endorsement programs, which require a stated number of course credits and a fairly static coursework requirement. However, the goal of the Edtech endorsement program has always been to facilitate a competency-based program. The competency-based evaluation framework of the K-12 online teaching endorsement program is intended to be highly flexible and adaptable. Its flexibility allows teacher candidates to supplement professional development experience for required course work, which not only saves time and resources for teachers, schools, and organizations, but also motivates teachers to update their knowledge and skills for online teaching via different avenues.

Field Experience Component

In Fall 2012, a graduate level two-credit online field teaching experience (Edtech 524: Field Experience in Online Teaching), designed to provide hands-on experience for teacher candidates in a fully online K-12 environment, was offered to its first cohort of online teaching endorsement candidates. If teacher candidates do not have previous K-12 online teaching experience, they must participate in a 90-hour field experience to complete the program requirements.

The Edtech program at Boise State has a long history of partnering with virtual schools, both in and out of state, as well as with the Idaho Digital Learning Academy (IDLA), the Idaho online supplemental program. Partnering with IDLA, we were able to quickly establish a host school for Edtech teacher candidate placement. Our work with IDLA is a true partnership in the sense that, in exchange for IDLA's teacher placement facilitation, the program agreed to assist IDLA teachers in evaluating their readiness for the K-12 Online Endorsement application and subsequent recommendation to the state of Idaho for acquiring the endorsement. We worked together to determine a suitable and appropriate evaluation framework designed to meet the needs of current online teachers and facilitate the acquisition of required knowledge and skills of in-service online teacher candidates. IDLA also helped organize orientation activities, such as introducing students to mentor teachers, and created online tutorials for the teacher candidates to familiarize them with their online course management system.

Structure of the Field Experience

The Edtech field experience is a course provided as part of the K-12 Online Teaching Endorsement program. The course requires 90 hours of virtual school experience which is necessary to meet the online teaching requirement for the K-12 Online Endorsement. Candidates who apply for the endorsement must have an existing Idaho teaching license and prior online teaching experience. The Field Experience course is required for those teachers who do not have prior online teaching experience.

During development of the field experience, an Online Field Experience Guide was created with input from the Office of Teacher Education in the College of Education at BSU and from IDLA (http://bit.ly/17SZE23). The following information is included in the guide:

- Program overview and goals, including applicable standards
- Clearly articulated expectations of Interns (online teacher candidates), Mentor Teachers, and University Supervisors
- Applicable policies for compensation, liability and required meetings
- Assessment criteria
- Online field experience activities aligned with K-12 online teaching standards

The terms of the partnership agreement between IDLA and the Edtech program were formalized in a Memorandum of Agreement and include:

- A checklist of required field experience tasks at IDLA

- Required Project Practice activities to be engaged in with guidance from the Mentor Teacher (i.e. posting class announcements, participation in a synchronous meeting)

- Required Project Assessment activities (i.e review an online course)

- Intellectual property agreement, compensation, and termination terms

- IDLA minimum teaching requirements

The process for the field experience participation is described in detail below:

- Candidates who are interested in enrolling in the field experience course must obtain the course instructor's/supervisor's permission to enroll. Students are only allowed to enroll after taking other relevant courses (Edtech 502, 504, 512, 521, 523, 597), or if they can provide evidence of similar courses or professional development experience.

- Per Idaho regulations, fingerprints and a background check must be cleared prior to entering the K-12 online classroom.

- Candidates provide their desired subject areas and grade levels to "teach" so that the host school can match candidates to their teaching interests and their designated mentor teacher. Mentor teachers are compensated for their participation.

- Candidates attend an initial meeting and orientation where they are introduced to their mentor teacher, the host school instructional managers, facilitators, and the university supervisor in a series of meetings before the start of the course.

- Candidates are introduced to the course management system. Login user ID's are established and provided by the host school prior to the orientation meeting. Candidates were expected to complete a Blackboard tutorial lesson prepared by IDLA.

- Candidates meet one-on-one with their mentor teacher(s) at a time that is convenient for them. The purpose of this meeting is two-fold. First, it allows the candidates and their mentor teachers to get to know each other better. Second, candidates and their mentor teacher(s) use this time to discuss an overall plan for the field experience, including detailed instructions about the level and type of involvement in the class.

- Each candidate is expected to work closely with his/her mentor teacher in the online classroom. Candidates are also expected to review resources provided to help with their understanding and involvement in a fully online K-12 environment.

- At mid-point in the field experience, the candidate is required to submit a mid-term report/self-evaluation to the university supervisor.

- At the end of the course, the candidate is required to submit a final report/reflection with the following information:

  1. Major responsibilities/duties/activities during the online field teaching experience class;

  2. Aspect(s) that worked well and those that could be improved; and

  3. Lessons learned in a fully online K-12 environment.

- The final report is signed by the candidate and the mentor teacher and submitted to the university supervisor.

Reflections

Online teacher candidate placement partnerships are beneficial because they create a qualified pool of candidates for virtual schools. It is important that university teacher education programs recognize and respond to this need. The College of Education at Boise State University has been supportive in our efforts in this area by providing resources and expertise from their experience with traditional student teacher placements. IDLA has proven to be an excellent partner school. Because they are a state-wide supplemental program, they not only have extensive experience working with traditional schools, but they also have a vast network of teachers from across the state, in every conceivable subject-area, creating a very large pool of potential mentor teachers. They were extremely helpful and supportive in developing any necessary tutorials, instruction, and support, as well as facilitation of teacher candidate experiences. They were involved from the beginning in helping to shape the process, expectations, and activities.

Given the resources and effort described above, teacher placements can sometimes be perceived as a burden on a host school. In our situation, in exchange for their support, we agreed to provide IDLA teachers with assistance in obtaining the Idaho K-12 Online Endorsement. In a competency-based program, teacher candidates can take advantage of prior preparation, professional development and experience, including informal learning opportunities, reducing the need for unnecessary duplication to meet arbitrary requirements of traditional endorsement and certification programs. In order to facilitate the process for existing IDLA teachers to obtain the endorsement, we initiated a pilot evaluation process using our competency-based framework. Eighteen online teachers participated in that process.

Other considerations and lessons learned include the following:

Allow Time for Essentials

In Idaho, all teacher candidates must be cleared in the state of Idaho regardless of their state of employment. Since Edtech is an online graduate program that is serving students from around the globe, additional time and resources were allocated to assist teacher candidates with fingerprinting and background checks prior to their interaction with public school children.

Compensation for Mentor Teachers

It was determined that the honorarium for compensating traditional mentor teachers was not sufficient for those who teach online because of the extra effort for the mentor teachers to effectively communicate with the students at a distance. Mentor teachers are compensated four times the typical rate for supervision of teacher candidates in Idaho.

Prepare Candidates Prior to the Field Experience

We require candidates to meet very specific criteria before admittance into the field experience course, and we have turned away many who we felt were not properly prepared for the experience, despite their enthusiasm.

Development of a Competency-Based Evaluation Framework

Competency-based frameworks for evaluation tend to be more resource intensive than traditional test-based or course completion-based programs. During the process of developing the endorsement program, a good deal of time and effort was applied to creating a user-friendly process for submitting artifacts and evidence of meeting the requirements of the endorsement. The process of developing a competency-based program included the following:

- Identified sample artifacts and evidence for meeting performance indicators aligned to the K-12 Online Teaching Standards
- Aligned sample artifacts and evidence to the performance indicators

- Created a candidate checklist for identification of artifacts and evidence
- Created a portfolio template for candidates to demonstrate competency for each performance indicator
- Developed a process for submission of artifacts and evidence for review
- Developed a process for submitting recommendations to the state

Florida State University
and Florida Virtual School

by Dina Vyortkina

History of the Program

The graduate program in Blended and Online Learning and Teaching (BOLT, http://coe.fsu.edu/bolt) was approved by the Florida State University Curriculum Committee in 2010. This is a fully online program for graduate and select undergraduate students, which answers the Obama administration's call to improve digital learning in elementary and secondary education. The National Education Technology Plan, Transforming American Education: Learning Powered by Technology (retrieved from http://www.ed.gov/technology/netp-2010), released in 2010 by the U.S. Department of Education called for an increased role for online learning in kindergarten through 12th grade and says colleges of education must include online learning in their curricula.

Our goal is to offer a program that prepares teachers of children in elementary schools and of adolescents in middle and high schools to teach learners in blended or online environments. School leaders, including principals, counselors, psychologists, and media specialists are also encouraged to participate, since their roles might be enhanced with this knowledge. These teachers and other school personnel learn how to apply principles of digital pedagogy and instructional design for K-12 e-learning, take advantage of available technologies, develop a full understanding of the impact and opportunities that their technology choices have on teaching and learning, and evaluate quality and effectiveness of online and blended programs, courses, and teachers.

The BOLT courses can be added to degree programs in full (as in the FSU College of Education Master of the Science of Teaching [MoST program], an initial certification program at the graduate level), or as electives to graduate degrees (including, for example, Educational Leadership/Administration or School Counseling program). Students from across the College of Education and in other Educator Preparation programs on FSU's campus, such as Information Studies, Communication Disorders, Art, and Music Education are encouraged to participate.

In May 2013 the program graduated its second cohort. Changes over time involved curriculum realignment based on new standards, legislative acts, and other factors. Delivery format, though always staying online, was enhanced with many technologies available to FSU faculty and students as part of the campus provision, including new open source technologies. The most significant changes we would like to highlight are (1) teaming up with the Florida Virtual School (FLVS) teachers to teach Pedagogy of BOLT and Issues, Trends, and Practices courses, (2) adding a 6-week practicum with FLVS, (3) formalizing FSU and FLVS student internship placement effective as of April 2013, and (4) expanding student engagement with FLVS in all four BOLT courses.

Current Status of the Program

The BOLT program offers four fully online courses:

- Foundations of Blended and Online Learning and Teaching K-12 (EDG 5073) – 3 credit hours, typically offered each summer semester
- Pedagogy of Blended and Online Learning and Teaching K-12 (EDG 5074) – 3 credit hours, typically offered each summer semester

- Technologies for Blended and Online Learning and Teaching K-12 (EDG 5075) – 3 credit hours, typically offered each fall semester
- Issues, Trends, and Practices in Blended and Online Learning and Teaching K-12 (EDG 5076) – 3 credit hours, typically offered each spring semester

To qualify for a certificate of completion, students have to maintain at least a B average in each of the courses.

We use BlackBoard as a Learning Management System and utilize a variety of other tools and technologies to facilitate learning and teaching, including but not limited to screencasting, videoconferencing (BlackBoard Collaborate, Adobe Connect, Skype), video, Qualtrics Research Suite, web-based presentation tools, Web 2.0, etc.

A brief overview of each course and its capstone experiences are presented below:

COURSE: *Foundations of K-12 Blended and Online Learning and Teaching*

Course objectives are based on the Guidelines for Professional Development of Online Teachers (SREB, 2009), and guided by National Standards for Quality Online Teaching (iNACOL, 2011). The course aims to provide an introduction to the field of blended and online learning and teaching (BOLT) in K-12 environment. Learners explore definitions, foundations, and learning theories of e-learning, instructional tools and strategies for the online environment, advantages and disadvantages of blended and online learning, myths and realities of BOLT, standards for online courses and teachers, and critical success factors for effective implementation of blended and online environments in K-12. Students proactively explore various resources in peer-reviewed journals, professional organizations, virtual education providers, and online repositories with the purpose of creating their own professional toolkit, which is hosted at each student's developmental BlackBoard site and maintained throughout the program. The capstone project involves the comparison of traditional and blended/online learning and teaching [paper and concept map] with action plan [standards-based] leading to continuous improvement in the BOLT area. Students also assemble a Toolkit, which is hosted at each student's developmental BlackBoard site (to be maintained throughout the BOLT program).

Selected course objectives:

1. Utilize correct terminology and definitions applicable to pedagogy, technology, practices, policies, and issues in the field of K-12 BOLT.

2. Select professional organizations, regularly monitor recent developments, research, and best practices in the field of K-12 BOLT, and participate in appropriate professional activities.

3. Maintain a developmental FSU Blackboard site, which will function as a toolkit of K-12 BOLT teaching and learning strategies, a collection of research and information on e-learning issues and trends, and a compilation and review of technological tools, for their own continuous professional development and projects in other BOLT courses.

4. Distinguish and analyze at least four models of blended learning.

5. Analyze characteristics of virtual learning and virtual schools.

6. Review and analyze the current status of K-12 BOLT in the US and internationally (practices, policies, requirements) to be able to forecast potential trends and issues in the field, and to be able to identify advantages, disadvantages, benefits, drawbacks, facilitating factors, and best practices in the field.

7. Create a personal action plan leading to achieving standards for K-12 BOLT quality online learning and teaching.

8. Analyze the theories and major concepts of curriculum design, student learning and assessment, and pedagogy in traditional K-12 learning environments and compare and contrast them with the theories and major concepts of curriculum design, student learning and assessment, and pedagogy in K-12 BOLT environments.

9. Describe essential elements of BOLT infrastructure and critical success factors for effective development and implementation of K-12 BOLT courses and programs.

10. Analyze and demonstrate their understanding of the following essential elements of K-12 BOLT: instructional design, teaching at a distance, learner characteristics, attributes, and support, technologies and communications, and e-safety and security.

11. Demonstrate technological, pedagogical, and content-specific knowledge as it relates to K-12 BOLT environments.

COURSE: *Pedagogy for Blended and Online Learning and Teaching*

This course contributes to and improves K-12 teachers' and K-12 school leaders' skills to successfully incorporate blended instruction in their classrooms, and those who teach in online environments. The course introduces the concept of digital pedagogy — art, craft, principles, and methods of instruction in blended and online K-12 learning environments to engage modern learners and provide the best learning experiences for diverse students. The capstone project engages students in developing their personal digital teaching philosophy which is research-based, learner-centered, and grounded in student's concentration area.

Selected course objectives:

1. Discuss the concept of digital pedagogy and apply it to their teaching philosophy (to be addressed at the beginning and at the end of the course).

2. Analyze and reflect upon National Standards of Quality for Online Courses (iNACOL, 2011), National Standards for Quality Online Programs (iNACOL, 2009), and National Standards for Quality Online Teaching (iNACOL, 2011).

3. Apply elements of quality course design and quality online teaching, as defined by Standards, to their curriculum planning, course content, instructional design, technology, student assessment, course management, and delivery of instruction in K-12 blended and online learning environments.

4. Identify social, psychological, and academic attributes of K-12 students and account for them through an appropriate variety of online and blended instruction activities to promote quality online learning.

5. Explore job duties of teachers working in virtual schools, including, but not limited to, responsibilities, tasks, issues, and satisfaction factors.

6. Address issues of educating students with exceptionalities and explore varieties of teaching strategies and techniques to provide quality learning experiences in K-12 blended and online learning environments to all students.

7. Distinguish between assumptions and realities associated with quality learning and teaching in K-12 blended and online environments.

8. Develop an awareness of all phases of the teaching/learning cycle for K-12 online and blended courses in a particular subject area and at a particular grade level.

9. Consider and address various issues associated with e-teaching, to include, but not be limited to, the notion of isolation of online teaching and learning, professional development, support mechanisms for teachers, barriers and facilitating factors, etc.

10. Assemble a collection of pedagogical strategies and techniques for online and blended teaching for students who perform at various levels of accomplishment and with various levels of motivation (to be hosted on an individual Blackboard site and to be maintained throughout BOLT program).

Based on student feedback and FSU's growing partnership with FLVS, we would like to expand opportunities for students to engage with FLVS at a more active level in this course. The proposed engagement, starting in Summer 2013, might include, but not be limited to, interviewing an online student, interviewing and shadowing an online teacher, observing virtual teaching practices, listening to student-teacher and parent-teacher phone calls, discussing with an FLVS teacher standard grading practices and trying out some online grading themselves (under close supervision). Active FLVS time will be 3-5 hours a week in June through the end of July to allow FSU students to: explore the FLVS LMS; interview full-time FLVS staff members about their day-to day activities, challenges, and rewarding moments; initiate discussions of teacher grading practices and to practice grading assignments, review recorded phone calls with students and parents (weekly check-in and/or Discussion-Based Assessments, behind pace, monthly calls, completions, etc.); and review recorded direct instruction sessions to stimulate reflection of current instructional practices across a variety of subject areas and grade levels.

COURSE: *Technologies for K-12 Blended and Online Learning and Teaching*

This course offers opportunities for participants to explore technologies, strategies, and tools to enhance learning, teaching, assessment, and communication in blended and online learning environment in K-12 schools, guided by National Standards for Quality Online Teaching (iNACOL, 2011), National Educational Technology Plan 2010-2015 (US DOE, 2010), and National Educational Technology Standards for Teachers (ISTE, 2008). Students learn and practice effective e-learning techniques and technologies appropriate for various ages, learner characteristics, and content areas. This course builds upon student prior knowledge of important technology-related issues to include, but not be limited to: plagiarism detection, cyberbullying, e-safety, sexting, digital divide, digital literacy, funding for technology, and assistive technologies.

Selected course objectives:

1. Apply correct terminology for technology-related concepts and issues in K-12 blended and online learning and teaching.

2. Describe various types of multiple literacies of modern learners, recognize them in their teaching practice, and suggest ways of enhancing student learning and engagement with technology in K-12 blended and online learning environments.

3. After reviewing state and national standards (e.g., National Standards for Quality Online Teaching (iNACOL, 2011), National Educational Technology Standards for Teachers (ISTE, 2008), and Technological Pedagogical Content Knowledge (TPACK), students will be able to reflect on how these standards are manifested in everyday work of teachers and suggest ways of reaching these standards (technology focus).

4. After analysis of case studies and review of resources and tools, students will be able to identify effective ways of utilizing various technologies for nine events of instruction that activate processes needed for effective learning (Gagne, 1985).

5. Apply selection criteria, guided by a checklist, to identify the most appropriate technologies for blended and online learning and teaching, present their rationale for selecting specific technologies, and create a lesson plan using their selected technologies for blended or online environment.

6. Identify and discuss issues, barriers, and facilitating factors related to technology integration in K-12 to enhance BOLT, and to identify knowledge and training needed to support teacher technology leadership and advocacy.

7. Identify practices and applications of effective communication enhanced with technology in blended and online learning environments.

8. Identify and discuss types, modes, and activities of online presence in K-12 blended and online learning environments.

9. Identify and demonstrate correct application of digital-age copyright laws and ethical and fair usage appropriate to K-12 blended and online learning environments.

10. Identify a current trend/issue related to the area of instructional technology, analyze it based on the provided guiding questions, and present results of their research and analysis to their classmates. Potential issues might include, but not be limited to: digital divide, cybersafety, copyright in the digital age, digital literacy, mobile learning, Web 2.0, game-based learning, e-readers, flipped instruction, etc.

11. Assess and discuss the status of and trends in blended and online learning and teaching (technology focus) in their state and/or school district.

12. After review of resources and requirements of funding agencies, students will be able to select the top three funding agencies in their field, review grant eligibility requirements, as well as identify various alternative funding sources such as business and community partnerships.

13. Select various technologies, tools, and strategies for K-12 blended and online teaching and learning based on selection criteria and to assemble a "toolkit" in their Blackboard developmental site (Sandbox) to be used in further BOLT courses and real-life applications, as manifested through the capstone project.

The capstone project in this class involves design of the short online course with various technologies (discussed with the instructor) and teaching it for a week for a group of at least three students.

Starting Fall 2013, we will introduce technologies employed by FLVS teachers for a variety of purposes (LMS, plagiarism detection tools, videoconferencing, etc.) to demonstrate real life application of technologies into learning and teaching online. FSU students will be working with FLVS teachers in enhancing their lessons with technology.

COURSE: *Trends, Issues, and Practices in K-12 Blended and Online Learning and Teaching*

This course offers opportunities for participants to utilize their skills and knowledge for K-12 learners in blended and online environment, and demonstrate their practical application for design, development, and delivery of their blended or online course, utilizing various technologies and principles of digital pedagogy. Students also explore, analyze, and reflect upon the latest national and international trends related to developing online initiatives. They interact with experts in the BOLT field both on the state and national level.

Selected course objectives:

1. Identify, describe, and analyze current trends, issues, and practices in the area of blended and online learning and teaching.

2. Analyze changing demographics and educational expectations in K-12 blended and online learning environments.

3. Analyze the latest national and international trends related to developing online initiatives in K-12.

4. Assess the status of K-12 blended and online learning and teaching in their state or school district and discuss the trends, as demonstrated by the latest findings (e.g., Digital Directions Survey, iNACOL documents, legislative docs, etc.).

If a student chooses a research track, a student is to:

- Enhance research skills to include but not be limited to: research design, literature review, data collection and analysis, reporting research findings, etc.
- Establish strategies to facilitate, conduct and disseminate research, and identify promising practices.

If a student chooses a course design and development route, the student is to:

- Apply *National Standards of Quality for Online Courses* (iNACOL, 2011) to the development of his/her course and reflect on this activity.
- Utilize his/her toolbox (assembled in BOLT courses and hosted on FSU Bb) to design, develop, and deliver a blended or online short course to the classmates, in accordance with agreed-upon specifications and in agreement with the identified scenario. The course should be age- and concentration/focus-area-appropriate. Media and delivery format should be in accordance with approved usage, policies, and regulations.
- Utilize a collection of pedagogical methods and various technologies for blended and online teaching for students who perform at various levels of accomplishment and with various levels of motivation (to be hosted on an individual Blackboard site and to be maintained throughout the BOLT program).
- Review and make suggestions for improvement to their classmates' short course content and its delivery by utilizing a rubric.

This course has multiple components, which are integrated and interconnected:

COMPONENT 1: *In-class discussion of BOLT trends, issues, and practices*
We discuss current trends as presented in iNACOL and other organizations' publications. Each student is responsible for presenting his/her section and leading the class discussion. Additionally, students are expected to follow online digests and webinars pertaining to the field of BOLT.

COMPONENT 2: *Expert connection*
We participate in videoconferences with various experts in the field to include but not be limited to iNACOL staff, practitioners from FLVS, and school administrators working in virtual learning labs, and blended schools.

COMPONENT 3: *Practicum (practical application)*
All students in class are paired with the practitioner in the field (FLVS) for 6 weeks to have an insider experience and be able to ask questions, share opinions, and observe current practices.

COMPONENT 4A: *Research track*
Several research topics are offered based on the recent research agenda:

a. District/school research on implementation of blended learning (plans, models, quality implementation characteristics)

b. A study of quality implementation from other fields in education (over-age, under-credited, multiple pathways and how these are serving similar populations, and what are the lessons learned)

c. Demographic studies

d. Use of iNACOL performance metrics to evaluate quality in some programs

COMPONENT 4B: *Course design track*

Based on one's career aspirations, a student may choose to build a short course suitable for BOLT to add it to one's professional portfolio.

COMPONENT 5: *Bringing it all together*

Students reflect on their course and BOLT experiences and assemble a portfolio (multimedia format) to include reflections, deliverables, and other content from all course components related to the field of BOLT. This portfolio is shared with other students in class and can be used for potential employers.

Field Experience Component

Though we partnered with the Florida Virtual School earlier, we formalized the relationships in April 2013. Information below pertains to student activities in the course offered in the Spring 2013 semester.

The 6-week practicum experience was a mandatory course component for all students in the Trends, Issues, and Practices of BOLT, culminating course of the BOLT program. Only those students who successfully completed three prerequisite courses were allowed to participate in practicum activities. Practicum was not counted toward certification within the state.

Prior to participation in their practicum, students were required to be fingerprinted and pass the background check. This expense (about $85) was covered by the student. The FSU also has a requirement for professional liability insurance and proof of medical insurance (http://coe.fsu.edu/Student-Academic-Services-OASIS/Classroom-Field-Experience).

Students completed a practicum application (academic information, professional aspirations, specific objectives for the practicum, desired subject area and grade level, etc.). The information was shared with a participating teacher and served as an introduction. Students were matched with participating teachers based on their professional interests and career aspirations (subject area and grade level). The exception was granted to three students in spring 2013 semester: two were teamed with the instructional design team at a virtual school, and one student worked with several teachers due to her interest in ESE and working online with students having Autism Spectrum Disorders.

BOLT students were required to familiarize themselves with information about FLVS, its mission, operations, facts, etc. Prior to the start day of the practicum in Spring 2013, all students, participating teachers, and FLVS administrators met virtually via videoconference to go over procedures, expectations, introductions, etc. After the common part, each teacher met with an assigned student in a virtual breakout room to discuss details and activities.

Students were required to complete training and familiarize themselves with the FLVS learning management system, student database, and any electronic tools utilized by FLVS teachers.

Cooperating teachers received guidance in terms of expectations and final practicum evaluation and their student participation (done online).

Typical practicum experiences were offered in middle and high school grade levels. As of now, we were not able to accommodate requests from our elementary education teachers as K-5 teachers are with Connections Academy and not FLVS.

Students participating in the Spring 2013 practicum were requested to post their observations and reflections in their private journals on Blackboard. Only a student and an instructor had access to the entries. Students were required

to keep a weekly log (but some posted more than once a week to keep an accurate record of their experiences). At a minimum, students were expected to record the following:

    a. Objectives for this day or week.

    b. Log of activities and tasks.

    c. Brief overview of what they learned; what was expected and unexpected; any observations that might be useful for them.

    d. Overall reflections.

    e. Any issues, concerns, questions, requests.

Additionally, synopsis of the practicum activities was one of the components of the student end-of-course portfolio. That component was shared with other students in class and with the FLVS liaison.

Typical student activities during the practicum included:

- facilitating class discussion forums
- conducting live lessons
- communicating with students
- delivering synchronous instruction
- evaluating students' work
- tracking student progress utilizing online administrative system
- communicating with students' parents/legal guardian(s)
- attending professional development sessions at the virtual school and getting access to recorded sessions of prior meetings
- attending faculty meetings
- responding to student and parent questions

As the practicum was only one component of the course, it was limited to 8-10 hours a week of active engagement.

The FSU did not have to pay for students to participate in the field experience. Students were supervised by EDG 5076 course instructors. Any issues were resolved with active involvement of a FLVS representative.

BOLT students and participating teachers interacted with each other via email, texting, phone, and virtually through other systems (e.g., Blackboard Collaborate and Skype).

Overall, the Spring 2013 practicum of FSU students at FLVS was a rewarding experience. Students considered it to be the highlight of the BOLT program and expressed the idea of extending the practicum period and spreading it across the program in each course.

As of Spring 2014, FSU students will fully engage with a FLVS teacher (ideally the one who was assigned to them back at the beginning of the BOLT program). It is hoped that by this time, BOLT students will have completed all training needed for practicum activities, and will be familiar with FLVS practices, rules of engagement, etc. This way, this practicum will be more effective and efficient as no time will be spent on introductions and "learning the ropes." Active FLVS time will be the end of January through mid-March, about 6-8 hours a week. FLVS cooperating teachers would follow a Level I internship program aligned with the FEAPS measures with a 50% reduced expectation of time on task for FSU students due to the 6-8 hour per week course criteria.

Reflections

1. Preparation for the field experiences needs to start well in advance to assure smooth experience of all parties involved.

2. Regular communication of multiple offices at both sides is a must (course instructor, FSU Office of Academic Services and Intern Support (OASIS), FLVS.

3. More lead time should be allocated for fingerprinting and background checks due to processing time.

4. Ideally, practicum experience should be full-time (but it is not feasible at this stage).

5. More formalized and structured process for end-of-practicum evaluation needs to be developed.

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Wayne State University

by Michael Barbour

History of the Program

There are two separate K-12 online learning initiatives at Wayne State University. The first is an in-service Graduate Certificate in Online Teaching. The Graduate Certificate Program in Online Teaching was initially proposed in early 2008 and was designed to prepare students for teaching positions in online or other distance education settings in both the K-12 and higher education environments. The certificate provided students with essential knowledge and skills in pedagogy, course development, evaluation, instruction, and other aspects of the educational process in online learning environments. Courses focused on: using web-based and Internet-based tools for educational purposes; designing technology-based instruction; teaching methods and concepts of teaching online; multimedia, computer-assisted instruction and distance education; and online instruction based on strong theoretical and research foundations. Finally, the certificate program was designed to provide learners with a theoretical framework for teaching online and related competencies. The Graduate Certificate in Online Teaching was officially approved by the Wayne State University Board of Governor's in the Winter 2009 semester and began admitting students during the Fall 2009 semester.

The second K-12 online learning initiative at Wayne State University is a proposal to allow pre-service students to complete a portion of their student teaching semester in an online learning environment. This initiative was originally proposed in Fall 2011 and would have provided pre-service teachers the option to complete six to eight weeks of online student teaching prior to completing eight weeks of traditional student teaching. The proposal called for this initiative to be phased in over a five-year period, with the number of students able to take advantage of this program being limited during the initial phases (e.g., Year 1 – one to three students, Year 2 – three to five students, Year 3 – five to eight students, Years 4 and 5 – based on student demand, but with screening still maintained). This proposal was close to approval by the Spring 2012; however, at the end of the 2011-12 academic year, there was a change in the leadership within the College of Education, Division of Teacher Education, and Office of Student Teaching. These administrative changes meant that the proposal would need to be further vetted during the 2012-13 academic year.

Current Status of the Program

At present, approximately 25 students have successfully completed the Graduate Certificate in Online Teaching, and approximately another 100 students are currently admitted to the certificate program. As a part of the certificate program, students complete a required course in the theoretical principles of designing and delivering instruction over distance (IT7210 Foundations of Distance Education) and a required course in the planning, presenting, and facilitating learning in online, blended, and face-to-face contexts (IT7130 Facilitation of Online and Face-To-Face Learning). Students are then asked to take two elective courses. Two of the six elective courses have a specific K-12 focus:

IT6140 Designing Web Tools for the Classroom
Design, development and evaluation of learning experiences using the World Wide Web. Students create and evaluate learning activities using the Web; creation of personal learning portal. Basics of HTML and common authoring tools.

IT6230 Internet in the Classroom

Developing problem-based instruction by integrating the Internet into the curriculum and lessons. Students examine models for lesson development and investigate how the Internet may be used as a resource in those lessons.

The remaining four elective courses are more focused on adult populations or have a more general focus:

IT7140: Designing Interactive Courseware

Design, development, and implementation of Web-based courseware. Characteristics, advantages, and limitations of the Web as an instructional delivery system. Appropriate instructional strategies for the Web. Use of contemporary development tools to create engaging, interactive, instructionally sound Web materials; design and development teams create and test a Web-based instructional module.

IT7220: Multimedia for Instruction

Instructional design and development applied to multimedia instruction, such as games and simulations. Instructional strategies for higher-order learning, including problem solving. Alternative design and development methodologies. Essential multimedia production tools and techniques. Students form design and development teams to create and test instructional modules.

IT7230: Advanced Multimedia for Instruction

Advanced topics in multimedia and web-based learning, including topics such as design, planning, production and editing of digital audio and video for use in multimedia websites and CD/DVDs used for learning.

IT7310: Learning Management Systems

Design and implementation of systems to support e-learning and traditional delivery. Implementation of courses in a generic LMS; interface of course materials to standards-based management systems, reusable learning objects, standards, and collaborative learning.

In addition to the course, students must complete an online teaching practicum. If the student has previous online teaching experience, the practicum requirement may be waived.

The second initiative, the online student teaching, is still currently in the proposal stages. It has been approved by the student teaching committee and by the Division of Teacher Education. An initial memorandum of understanding between Wayne State University and the Florida Virtual School has been drafted and is currently being reviewed by the legal departments of both institutions.

Field Experience Component

The first initiative, the Graduate Certificate in Online Teaching, includes a two-credit hour practicum, where students are paired with an online instructor in the K-12, higher education, or corporate environment. The practicum is not designed to be equivalent to an online "student teaching" experience; it is more akin to the "pre-student teaching" or observation component that many teacher education programs have in the semester prior to the student completing their student teaching semester. The second initiative is a field experience.

Structure of Field Experience

The structure for the field experience in the Graduate Certificate in Online Teaching is thought about in terms of three, five-week periods over a single, fifteen-week semester. Typically, a student would spend the first five weeks of the

practicum observing and asking questions, with the instructor sharing their thinking behind specific online pedagogical decisions they are making (i.e., explaining to the student why they are doing this or that). The second five-week period would see the student beginning to assist the instructor with some of the online activities. During the final five-week period, the student will actually take responsibility for one or more of the course activities.

The kinds of activities that the student might engage in would vary from situation to situation. However, the student negotiates with the instructor a level of activity and specific activities that both of them feel comfortable with the student doing. Activities may include:

- monitor each student's learning activities and progress as applicable in the online course;
- identify any existing or potential problems in student's behaviors or progress;
- inform the teacher of any observed problems or concerns;
- provide suggestions to address existing and potential problems or issues;
- address issues and problems appropriately (consult the teacher prior to action as necessary);
- help design, revise, and implement online learning activities, assignments, and assessment tools;
- send friendly reminders of approaching due dates, learning activities, and assignments;
- as appropriate, lead, guide, facilitate, monitor, and summarize threaded discussions, debates, role plays, case studies and/or guide students to summarize general, open-ended discussions;
- help facilitate synchronous, live class sessions, as applicable with planning, technical support, and other facilitation efforts as necessary;
- provide any other facilitations as necessary and appropriately monitor of the assigned group performance and processing;
- help with guidance, clarifications, additional resources, motivations, technical assistance, and others as necessary;
- identify existing problems and address them appropriately (contact the teacher first for thoughts and suggestions before serious interventions, such as serious warning messages to a student, etc.);
- identify potential problems or issues regarding the team tasks, group process, peer relationship, media and communications, etc.;
- provide suggestions to address potential problems or issues;
- provide any other facilitations as necessary and appropriate.

The main thing to keep in mind about the practicum is that for it to be used for the Graduate Certificate in Online Teaching, the student actually has to be engaged in some form of online teaching during the semester. This is not to say that the student is expected to undertake a "student teaching" kind of experience (e.g., a situation where the student observes and then gradually takes over all of the instructor's instructional responsibilities). This is only a two-credit-hour experience. Typical of any graduate experience, it would be expected that the time the student spends "inside the classroom" is equal or double the time they spend outside of the classroom. For a two-credit-hour course, it would be expected that the student would spend the two credit hours of "inside the classroom" time, plus another two to four hours of "outside of the classroom" time. This means that there is an expectation that the student would spend, on average, four to six hours a week engaged in their practicum responsibilities. Typically, students have found that it is a little less at the beginning of the semester (i.e., during that first third when they are in the exploring and understanding stage), and a little more at the end of the semester (i.e., during the final third when they are doing some online teaching).

In terms of the second initiative, online student teaching, the initial expectations are that students would have the option to complete a six- to eight-week period of online student teaching, then complete eight weeks of traditional student teaching in a face-to-face classroom. It is an option, as students would also be able to complete their entire student teaching in a traditional environment. The model that has been proposed for the actual online student teaching experience would be based on the model used by the University of Central Florida, described later in this report.

Reflections

Like many institutions, Wayne State University began its K-12 online learning focus at the in-service level with a Graduate Certificate in Online Teaching. Also similar to many institutions, this certificate program includes multiple tracks, of which the K-12 online learning track is just one. Unlike other institutions, Wayne State University was assisted by the fact that the State of Michigan had recently become the first state in the United States to implement an online learning graduation requirement. The preparation of teachers to implement this requirement was incorporated into the State's Standards for the Preparation of Teachers: Educational Technology (i.e., 84 standards were added to the original 87 standards focusing on the areas of "Online Technology Experience and Skills," "Online Course Design," and "Online Course Delivery"). These changes to the state standards meant that much of the curricular changes that needed to occur to create the Graduate Certificate in Online Teaching were already in place.

Beyond the opportunities provided by the alignment of K-12 online learning events in Michigan, the other key factor in the K-12 online learning teacher education initiatives at Wayne State University has been a focus on research. Several of the courses in the Graduate Certificate in Online Teaching have become research sites for the faculty as they enact case studies and design-based research studies to improve upon the curricular materials and delivery model utilized in these courses. Further, there have been several sets of curricular materials for the Graduate Certificate in Online Teaching that have been developed through funded initiatives, all of which have included an evaluation component before the materials were finalized. Finally, the resources that have been incorporated into the Graduate Certificate in Online Teaching, from readings to curriculum, have all been research-based.

Arizona State University and Florence Virtual Academy

by Leanna Archambault

The K-12 Online Teaching Certificate program, as part of the Masters in Educational Technology in the Division of Educational Leadership and Innovation, was developed and approved at Arizona State University in 2009 and officially began in 2010. Its roots stem from an attempt to address the growing number of online educators who have graduated from traditional teacher education programs without adequate preparation. Through research in K-12 online teaching and learning, it has become clear that online teachers have little to no pedagogical preparation (Archambault, 2011). Because the majority of online teachers seated in traditional face-to-face classroom settings, it has become necessary to offer coursework and field experiences that serve to help educators "re-tool" their skills and assist them with the added roles they are asked to play in the online context.

Through a careful review of the literature related to online teaching, three major areas were identified as significant to be addressed as part of a graduate program geared to prepare teachers to be successful in the online environment. These domains are technological, pedagogical, and content knowledge, as well as the intersections of these domains as described by the technological pedagogical content knowledge (TPACK) framework (Mishra & Koehler, 2006). TPACK involves an understanding of the complexity of relationships among students, teachers, content, technologies, practices, and tools; and articulates the relationships between and among the subject matter that is to be taught (content), the practices, processes, strategies, procedures and methods of teaching and learning (pedagogy), and knowledge pertaining to computers, the Internet, Web 2.0 tools, digital video, etc. (technology). Koehler and Mishra define TPACK as the connections and interactions between these three types of knowledge.

The goal of this program is to prepare current K-12 teachers to teach in an online environment and to become leaders in the development, implementation, and evaluation of online programs. This includes helping students understand how various topics within subject areas are effectively represented using technology and pedagogical strategies required to teach these concepts online. This is accomplished through offering course work that addresses all three domains along with field experience opportunities. Through these experiences, students would be prepared to teach in online and blended educational environments.

The program seeks to create lifelong learners and to prepare educators in undergraduate programs for the educational setting of the 21st century, including development of the following skills:

1. Representing learning concepts using various technologies,
2. Implementing online pedagogical techniques that use technologies to teach content,
3. Knowing what makes concepts easy or difficult to learn,
4. Understanding how technology can help address learning problems,
5. Grasping the importance of students' prior knowledge and theories of epistemology, and
6. Understanding how technologies can be used to build on existing knowledge and develop new epistemologies or strengthen old ones (Mishra and Koehler, 2006).

Current Status of the Program

The K-12 Online Teaching Certificate consists of five online classes addressing research, methods of teaching online, course design, and a practicum experience:

Principles and Issues in Online Teaching (3 credit hours)

Principles and Issues in Online Teaching examines current issues, policies, and trends pertaining to web-based teaching and learning. Students actively explore research related to online learning. Emphasis is on issues and trends related to virtual schooling and emerging best practices for effective online instruction.

Methods of Teaching Online (3 credit hours)

Methods of Teaching Online addresses the theory and practice for online teaching and learning, and explores a range of resources and skills in creating web-based curriculum materials. Participants evaluate a wide variety of online resources leading to the design and creation of a web-based curriculum unit or set of web-based learning materials.

Online Course Design (3 credit hours)

Online Course Design emphasizes an instructional design approach to the development of online courses. Participants develop an online course customized for use in their instructional setting including defining course goals and objectives, instructional lesson plans, activities, materials, and assessments.

Practicum (3 credit hours)

The practicum component focuses on applying content acquired in online teaching and methods courses to field-based experiences. Participants are given the opportunity to shadow an online teaching professional for practical, hands-on experience. Participants demonstrate their knowledge, skills, and disposition for online teaching through directed mentorship from qualified teachers and/or faculty.

In addition to these core courses, students in the K-12 Online Certificate Program must then select one elective from the following four courses that are also offered to graduate students pursuing their master's degree in educational technology:

Technology Integration Methods (3 credit hours)

Technology Integration Methods is a beginning level graduate course that focuses on methods for effectively integrating computer-based technology in teaching and learning. It includes investigation into the use of computers and computer-based technology in the classroom, integration of technology into the teaching and learning process, and using the principles of instructional design in the design of technology-rich learning environments.

Using the Internet in Education (3 credit hours)

Using the Internet in Education explores the Internet as an educational tool for research, inquiry-based learning, and online learning communities. It examines the potential of telecommunications to influence K-Adult education. Students will actively explore: (a) a wide variety of online informational, curricular, and interpersonal resources, (b) ways to successfully integrate online resources in teaching and learning, and (c) current issues, policies, and trends pertaining to global electronic networking.

Emerging Technologies (3 credit hours)

This course explores current key trends and issues concerning the impact of cutting edge technology and multimedia on K-12 student learning. Topics include the design of curriculum and instruction that are enhanced through innovative technologies, including, but not limited to, Web 2.0 tools, such as blogs, wikis, social networking applications, data mashups, Google Apps, data visualization applications, and multi-touch interfaces.

Technology as Mindtools (3 credit hours)

A mindtool is used to help students think and learn about a topic or concept. Mindtools are computer applications that, when used by learners to represent what they know, necessarily engage them in critical thinking about the content they are studying (Jonassen, 2000). This course outlines current technologies as examples of mindtools and provides students with the requisite skills and understanding of research needed to implement these tools in their instruction.

Field Experience Component

As part of pursuing the K-12 Online Teaching Certificate at Arizona State University, a field experience is required. This offers students practical, hands-on experience to demonstrate their knowledge, skills, and disposition for online teaching through directed mentorship from qualified teachers. The goals of the field experience are for students to: justify instructional strategies in online learning environments; facilitate an online learning environment; evaluate current learning environments to determine what improvements might be made; and exhibit the knowledge, skills, and understandings of concepts related to technology as well as competency in technology specific to an online learning environment.

The field experience takes the form of a practicum over the course of seven and a half weeks. To facilitate ease of placement, a partnership was formed with Florence Virtual Academy (FVS). FVS is a public, district-led school, serving grades 6-12 within the state of Arizona. A Memorandum of Understanding (MoU) was developed between program faculty and the FVS administration regarding expectations and responsibilities for the practicum experience. Field placements were made according to content area, and it was necessary for students (who were existing teachers in traditional settings) to provide their fingerprint cards and background clearance prior to interacting with online students.

During the practicum placement, program faculty and the school administration work together to ensure that students are involved in every facet of teaching in an online environment, from observing their cooperating teachers and being mentored by them, seeing how content is conveyed in the online classroom, participating in online staff meetings, and being able to witness first-hand the challenges that online teachers face. As a result of the practicum, students are much better prepared to teach in a virtual classroom. As one student noted:

> Increased collaboration with the instructor is one of the most motivating reasons for me to become an online teacher. I want to be able to spend more time one on one with my students. I want to help them understand content, motivate them to take their learning further, and facilitate authentic learning. In a brick and mortar building, we are ruled by a schedule. Math stops so that we can get to PE, reading stops so that we can go to lunch; in an online environment this constraint is taken away. Over the course of this past year, I have learned a great deal about the variety of online learning opportunities for students. There are as many unique learning opportunities as there are unique learners.

Reflections

Through the development of the K-12 Online Teaching certificate program at Arizona State University, a number of lessons have been learned that can benefit those seeking to create their own programs in this area. First, there needs to be buy-in at the department, college, and university levels prior to program inception, creation, and implementation. This includes garnering the support of faculty and administrators alike. Because program development involves a significant amount of resources, including course creation, partnership development, marketing, scheduling, and coordination, along with ongoing teaching, a concerted effort is necessary. It should be carefully considered as to

whether developing and building such a program fits with the existing mission and vision, and if there are available resources to dedicate to such a large undertaking. Another lesson is the time that it takes to cultivate the necessary partnerships with virtual schools to make such a program successful. Ideally, as with the Edtech program at Boise State, strong partnerships can result in mutually beneficial results, with virtual schools able to hire effectively prepared teachers who need little training and are ready to be successful in the online environment. Finally, while a separate certificate program is a step in the right direction, teaching in online and blended settings is an important part of any master's program in educational technology. As these areas continue to grow, faculty must work together to ensure that the necessary knowledge, skills, and experiences be woven in to all coursework and practica in order to prepare all teachers to enter 21st century classrooms.

Future Directions

The K-12 Online Teaching certificate program at Arizona State University continues to expand and grow as teachers explore options for expanding their skill sets and seek career opportunities in online environments. Areas for expansion include forging connections to other online programs that may be interested in hosting graduate students for their practicum component. Also, coursework moving forward will encompass blended learning, particularly for teachers who are in traditional settings but would like to incorporate online elements into their curriculum. Program faculty would also like to work with pre-service teacher education programs to provide an option for students to complete one of their field experience placements in an online setting. Through providing coursework and field experience opportunities to teachers moving into the blended and online environments, Arizona State University seeks to transform the future of education by providing K-12 students with well-qualified teachers who are able to leverage the power of technology to improve learning.

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Mount Vernon Nazarene University and TRECA Digital Academy

by Dean Goon

History of the Program

The Graduate and Professional Studies Teacher Education Department at Mount Vernon Nazarene University began a pilot program in the spring of 2012 to offer field placements for candidates interested in exploring teaching and learning in virtual schools.

During the fall of 2011 MVNU began exploring the possibilities of K-12 virtual field placements for field one graduate placements. Both the professor assigned to the program (University Supervisor) and the Dean of the School of Education had previous extensive experience with virtual school administration and professional development. Based upon this experience and the current positive growth of blended and virtual schooling, the University Supervisor began a casual review of models that would be suited for graduate students as their first field placement. At that specific time, very little resources were found that would provide a framework for a model for virtual field placements.

The University Supervisor consulted with the administration of TRECA Digital Academy (TDA) in Marion, Ohio, on possible models and components for a successful field experience for the MVNU. The collaborative team decided to focus the pilot study on graduate candidates representing the spectrum of teaching from early childhood to secondary education. The University Supervisor presented the virtual field placement option to three sections of the Technology for Educators 6013 course that was taught during the fall term of 2012. There were nine interested candidates. Their interest was noted and passed along to the Director of Field Studies at MVNU for consideration. MVNU decided to only partner with TRECA Digital Academy for the initial pilot study.

During the fall of 2011, the University Supervisor worked closely with the Curriculum & Instruction Manager (Virtual School Supervisor) at TRECA Digital Academy to create an adaptable model for the MVNU virtual field experience.

The pilot program was launched in February of 2012 with a mandatory all-day orientation workshop for the virtual teaching candidates and cooperating teachers. The orientation was lead by the University Supervisor and Virtual School Supervisor. For most candidates, the orientation workshop was a one-hour commute to TRECA Digital Academy. The University Supervisor facilitated a session on trends in virtual schooling in Ohio and across the country. In addition, he reviewed the expectations for the virtual field experience. The Virtual School Supervisor conducted a session with the candidates and cooperating teachers on the organizational structure of TDA and the necessary skills virtual teaching requires. The afternoon session provided the teaching candidates a one-on-one with their cooperating teacher. The cooperating teacher introduced the teaching candidate to the curriculum, online learning platform, software, and communication tools used by TDA. The teaching candidates further explored the specifics of TDA by touring the facilities and meeting the leadership team from each department. The teaching candidates used the first weeks to work and learn within the learning management system, ask questions of their cooperating teacher, and develop a plan to complete the required field experience hours.

During the virtual student teaching experience, the teaching candidates had three components that needed to be fulfilled for a successful online field experience for the 75 hour standard:

1. Online Field Experience Rubric
2. Weekly Reflections
3. Moodle Modules

Online Field Experience Rubric

The foundational assessment for the MVNU online graduate field was a rubric based upon the *National Standards for Quality Online Teaching* produced by iNACOL. Each standard was included in the rubric. Candidates were assessed on the criteria of unacceptable, acceptable, and competent. The cooperating teacher commented on the activity completion and rated the teacher candidate according to the criteria on the rubric. The field supervisor required a mid-term check of the rubric with a short narrative from the cooperating teacher. The final submission of the online field rubric included an extended narrative from the cooperative teacher and field supervisor about the candidate's quality of work based upon the *National Standards for Quality Online Teaching*. The initial target goal was for the candidates to complete a minimum of 80% of the skills or activities outlined by the iNACOL standard categories of:

- Organizing Content Knowledge for Student Learning
- Creating An Environment for Student Learning
- Teaching for Student Learning
- Teacher Professionalism
- Technological Skill
- E-mail Communication

Required Meetings

Candidates were required to attend three mandatory meetings. The first was the initial TRECA Digital Academy orientation. Then candidates were required to attend a specific workshop, webinar, or conference specific to Blended or Virtual Learning. Lastly, all candidates were required to attend a debriefing session. During this session, each candidate presented on a certain aspect of virtual teaching or learning in a storefront presentation format. Also, a virtual meeting was held with all Cooperating Teachers and stakeholders to collect ideas for improvement and what worked well.

Weekly Reflections

Candidates were required to contribute to bi-weekly reflections within the LMS for the field placement experience. Each reflection had a guided question or prompt for discussion. Each candidate had to respond to the other contributor's discussion.

Moodle Modules

Candidates were required to complete four modules that focused on the following aspects of virtual teaching and learning:

- *Edutopia Webinar: Explore Online Learning* – This self-paced webinar provided candidates the opportunity to explore the role of a teacher in a virtual teaching environment. Candidates responded to guided questions based upon the webinar content.

- *Behind the Scenes: Research Report on your Virtual School* – Candidates completed an interview and checklist for a detailed report on their virtual school placement. Research items included:

- Curriculum and Materials

- Technology

- Administrative Structure and Organization

- Special Services

- *Digital Learning Object Portfolio* - Candidates were asked to assist their Cooperating Teacher to create digital learning objects for instruction. The description for the Portfolio follows: As part of your duties as a (VS) educator, you need to be able to create learning objects that students can access for lesson reinforcement, remediation, introduction, closing, or just for additional help. Over your online field experience, you will create five learning objects with direction of your Cooperating Teacher. These learning objects need to be relevant to your current placement and something the students can use. Submit the web link, brief description of the intended use of the object, directions for students, and correlated standards on a document in Moodle. In addition, the options are wide open. A virtual field trip or a recorded session in Elluminate or on a smartboard would be a great learning object. Be creative and make sure your learning object displays a high level of quality.

- *Blended Learning Investigation* - Candidates identified and researched three profile schools from a Blended Learning National report. Each Candidate created a data chart or spreadsheet comparing a minimum of 10 characteristics of these rising model schools. Possible Characteristics:

  - Enrollment

  - Program Model

  - Unique Features

Summary

The pilot program of spring 2012 was a quality experience for the teacher candidates, cooperating teachers, TRECA Digital Academy, and Mount Vernon Nazarene University. The collaborative relationship that was established with cooperating teachers and administrators from TRECA Digital Academy demonstrated a commitment to rethink teacher education. With the assistance of all stakeholders, improvements and adjustments were made for the next two virtual field placements.

Current Status of the Program

Upon completion of the first field placement with TRECA Digital Academy and communication with the cooperating teachers and administrators at TDA, field supervisors, and Dean of Education, MVNU decided to pursue a second virtual field experience. The Office of Field Experience examined the suggestions for improvement that the pilot candidates, field supervisors, and cooperating teachers gave in their reflections and adjusted accordingly. The adjustments included the following improvements:

Online Field Experience Rubric

One adjustment that was made to the Online Field Experience Rubric was to add in a comparable Teacher Professional Assessment (edTPA) linked to the iNACOL online teaching standards. MVNU was a pilot for the original TPA standards proposed by Stanford University. By including the edTPA standards in the online field rubric, it provided a consistent expectation for all teaching candidates in both the virtual and brick and mortar settings. edTPA is a subject-specific, pre-service teacher assessment process with versions for Early Childhood, Elementary, Middle Childhood and Secondary licensure. Stanford University faculty and staff at the Stanford Center for Assessment, Learning, and Equity (SCALE) led the development of edTPA with significant input from teacher education programs nationwide. The

American Association of Colleges for Teacher Education is a partner, informing and engaging the professional educator preparation community around edTPA. Pearson is an operational partner that provides the scoring and reporting infrastructure. Stanford University is the exclusive owner of edTPA.

Blended Learning Site Visit

Adjustments to attend a required workshop, seminar, or webinar on virtual learning and blended was changed to be a site visit of a blended school in action. MVNU partnered with Nexus Academy of Columbus to provide a one-day field visit with their blended model. Student teachers were able to tour the facility, talk with student and teachers, and spend time with the administrator learning more about the effectiveness of the blended learning environment.

Digital Learning Objects

The digital learning objects were adjusted to accommodate more interaction with students through digital interaction tools like Elluminate. Teacher candidates were required to have three recordings of teaching a lesson or tutorial session, or explaining a concept to students. In addition, two digital objects would be created with the direction of the Cooperating Teacher for their instruction or curriculum.

Asynchronous Unit Plan

A large component of the traditional field placement is the development of a detailed lesson plan and teaching of that plan. Due to the nature of the virtual learning environment, less opportunities arise for teacher candidates to teach a traditional lesson. Virtual Teaching candidates were required to complete the following module:

> For this module you are going to develop a three-day asynchronous virtual lesson plan based upon the MVNU lesson plan template. Complete the lesson plan template to align as closely to a virtual learning experience as possible.

> Required elements:
> – Create asynchronous lesson on your classroom web portal
> – Include multimedia and interactive elements (Jing recordings, YouTube, Voki, etc.)
> – Virtual lesson should include grade level learning activities and flow of work that meets state standards or common core
> – Lesson should include an introduction, appropriate assessments, and interaction
> – Complete the MVNU lesson plan template and upload it to Moodle

Reflections

The virtual graduate field placement at MVNU is moving into the third semester. We are experiencing more and more interest from graduate students in virtual teaching. The University Supervisor was the only faculty involved with supervising students. Starting the spring of 2013, the program has 13 candidates, which requires additional faculty. In addition, MVNU needed to add other virtual schools to accommodate more teacher candidates. At this time, MVNU has secured relationships with Virtual Community School of Ohio, Ohio Distance and Electronic Learning Academy, and TRECA Digital Academy. MVNU continues to visit the blended Nexus Academy for an exploration into blended environments. MVNU is looking forward to teacher candidates having experiences from very diverse virtual schools with different approaches.

MVNU Teacher Education is trying to position the department to be an advocate on the university level of 21st Century teaching and learning. Continued advancement and preparing education faculty for championing virtual education are key ingredients to success.

University of Central Florida and Florida Virtual School

by Michael Hynes, Bryan Zugelder, and Janet Zajac

History of the Program

The program began as a small pilot of junior level interns in spring 2009. Students were selected in coordination with program faculty and were invited to participate. The junior level interns completed seven weeks in a brick-and-mortar school and seven weeks in the Florida Virtual School. Since spring 2009, 136 interns, both junior and senior level, have participated in the program.

Current status of the Program

Pre-service teachers in this program take education foundations courses in classroom management, learning theory and assessment, content area reading, pedagogical coursework in content-specific areas, and content courses in their prospective field (mathematics, science, social science, Spanish, French, English). The following are courses related to K-12 online learning: EME 2040: Introduction to Technology for Educators; EDG 4410: Classroom Management and Teaching Strategies, and XXX4360/4361: Instructional Analysis methods course where students are taught various online platforms used in education. Students learn about: Learning Management Systems; technology tools; teaching and learning in virtual schools; how to facilitate student engagement and interactions with texts, instructor, and others in an online environment; the importance of classroom management; assessment, feedback, and monitoring of student progress. Instructors and students learn how to use synchronous (i.e., Elluminate, Skype, Adobe Connect) and asynchronous means of communication and how to use them in their prospective classrooms.

Field Experience Component

The UCF model includes a field experience component comprised from Internship I (280 hours/14 weeks) and Internship II/Grad 6hr (500 hours/14 weeks). To date, all virtual field experiences have been completed at the Florida Virtual School (our partner in this model). The field experiences component follows National Council for Accreditation of Teacher Educators (NCATE), Florida Educator Accomplished Practices (FEAPS), International Association for K-12 Online Learning (iNACOL), International Society for Technology in Education (ISTE), Southeastern Regional Education Board (SREB), and National Education Association (NEA) standards.

All student placements are in-state, at the Florida Virtual School. When the program first started, only six students chose to enroll in the program. Since 2009 to date, 136 pre-service teachers have selected the virtual school field experience. Participating pre-service teachers receive university credit for completion of their virtual school field experience (three hours for Internship I, 12 hours for Internship II, and six hours for Graduate Internship). Students self-select to participate in the virtual field experience program. UCF does not pay for pre-service teachers to participate in the virtual field experience; in addition, interns pay for their own fingerprinting background checks. Pre-service teachers who choose to complete a virtual school field experience need to be independent learners and thinkers, have good time management and organization skills, be flexible, and have a propensity for problem-solving, strong content knowledge (CK), pedagogical knowledge (PK), technological knowledge (TK), and technological pedagogical knowledge (TPACK).

All supervising/cooperating teachers at the Florida Virtual School receive Clinical Educator training by UCF, College of Education faculty, free of charge. The Clinical Educator training course is a graduate course worth three semester hours. The virtual school supervising/cooperating teacher's role entails coaching, mentoring, supporting, supervising, observing of pre-service teacher's performance, and evaluating overall performance during the virtual field experience. Pre-service teachers are matched with their supervising/cooperating teachers based upon content expertise and in conjunction with the Florida Virtual School's needs/criteria. UCF selects supervising teachers who have at least three years of experience, a proven ability to mentor adults, performance that reflects a positive impact on student learning, and evidence of clinical educator training. Communication between the supervising/cooperating teacher and the pre-service teacher is of utmost importance; they communicate daily via Email, phone, face-to-face meetings, virtual meetings (e.g., using Web 2.0 tools, web conferencing, social networking, etc.).

The virtual field experiences at Florida Virtual School are offered in the following areas: Grades 6-12 in Mathematics, Science, English/Language Arts, Foreign Language, Social Science, Exceptional Education and Art Education. Pre-service teachers do not create content; instead, they use content developed by the Florida Virtual School. Participating pre-service teachers facilitate discussion forums, use various synchronous communication means for conferencing, tutoring, webinar hosting, delivery of synchronous instruction, and problem-solving (i.e., Elluminate, Skype, Adobe Connect). Pre-service teachers are also involved in evaluating and monitoring student work, communicating with students and their parents/legal guardians, complete required paperwork, communicate and collaborate with learning coaches, and attend faculty meetings, teacher professional development sessions at Florida Virtual School. UCF, College of Education requires all pre-service teachers to complete a Teacher Work Sample to document the impact they make on student learning; pre-service teachers are also evaluated based upon proficiency levels at the pre-professional stage of development in the Florida Educator Accomplished Practices.

Structure of Field Experience

The virtual field experience is 14 weeks long: 280 hours for Internship I and 500 hours for Internship II/Graduate. It is part of a course within the UCF's teacher preparation program and a graduation requirement also is counted (and recognized by the state of Florida) toward certification within the state/program. The virtual field experience supervision is monitored by the UCF, College of Education Internship Coordinator, who supervises between 6-12 interns per semester. The internship coordinator for this program is a former Florida Virtual School instructor and a UCF faculty member. There is also a district-level supervisor and a class-level supervisor (supervising teacher) at Florida Virtual School.

Reflections

The UCF-Florida Virtual School pre-service teacher virtual field experience has provided several lessons about online K-12 pre-service teacher preparation, selection of candidates, ways to maximize pre-service teacher success, and ways to better collaborate with all stakeholders.

Pre-service teachers must have the following skills, knowledge, and dispositions in order for them to succeed in their virtual field experiences:

- Be extremely organized.
- Have effective written and verbal communication skills.
- Have the ability to multi-task, be flexible (with virtual students, learning management systems, and technology).
- Demonstrate the Florida Educator Accomplished Practices in a virtual environment.
- Know how to teach and facilitate student learning in an online environment.

- Demonstrate professional dispositions.
- Have depth of knowledge in subject matter.

The K-12 virtual learning environment is not a good fit for every pre-service teacher, even those who might think they could or would like to do it.

Many successes have resulted from this virtual field experience program.

- Pre-service teachers are learning how to teach and facilitate student learning in an online environment.
- Pre-service teachers are being hired to teach in 6-12 online schools.
- Pre-service teachers are differentiating instruction to meet students' diverse learning needs.
- Pre-service teachers communicate with parents regularly about student progress.
- FLVS teachers, administrators and former FLVS teachers have provided invaluable service to the development and operation of the virtual internship experiences.

The following areas would strengthen both the program and the candidates' preparation to teach in K-12 virtual schools:

- A research-based screening tool that would help select candidates who would be most successful in online K-12 environments.
- Virtual instruction in grades K-5 will become operational in 2012-13. It will be important to add virtual teaching experiences for teacher candidates focusing on these grade levels.
- More time learning and teaching in K-12 online environments (with scaffolded support from online mentors) may help pre-service teachers become more proficient in online teaching and learning.
- Teaching expertise on K-12 online learning has come from former and current FLVS teachers and administrators. This needs to change, but the models of operation are so different between UCF and FLVS that the faculty would need training from FLVS to participate.
- Conduct research to determine effective virtual teaching practices not unlike the 19 effective 'brick and mortar" teaching practices determined by the MET study of the Bill & Melinda Gates Foundation and listed on the "TeachingWorks" web site.
- Conduct research to determine effective means to instill effective virtual teaching practices in teacher candidates.

Utah State University and Utah Virtual Academy

by Robin Parent

History of the Program

The Teacher Education and Leadership Department within the College of Education at Utah State University (USU) was approached by the Utah Virtual Academy in the spring of 2010 with the hope of forming a partnership to provide student teachers for the Virtual Academy. The first priority of the Office of Field Study at USU was investigating the possibility of virtual student teaching being a viable component to the field experience of secondary student teachers.

During the summer and fall of 2010, USU began conducting a literature review of K-12 virtual teaching and virtual field placement for student teaching, as well as completed an evaluation of the Utah State University secondary education field placement requirements to examine how the Utah Virtual Academy could or could not meet these requirements. It was found that, with minor adjustment, the Utah Virtual Academy could provide an experience that would meet, and in some cases, add new and useful experiences to the field placement. At the conclusion of the literature review and evaluation, the information was presented to the departments within the College of Education that encompass the specific content areas for student teachers. The project was given permission for a pilot study that would include Social Studies composite majors/minors and English major/minors for the fall of 2011.

The USU teaching administration decided to focus the pilot study on secondary student teachers in the humanities composite areas to keep the pilot numbers manageable. During the spring semester, the Office of Field Study presented the virtual student teaching option in the methods courses that are taught the semester before student teaching. The administrators at USU felt it was crucial to offer the virtual student teachers a traditional placement as well as their virtual experience to ensure that they were prepared for both opportunities. This led to a hybrid semester design that is made up of seven weeks in a virtual placement and seven weeks in a traditional brick and mortar placement. Currently the experience is designed to run in the fall semester to allow for a professional development workshop in August where the student teachers meet their virtual cooperating teachers as well as become acquainted with the technology, curriculum, and with the Utah Virtual Academy overall. There were fifteen interested individuals. Eight of the volunteers were outside of the humanities area and thus did not fit the criteria. Their interest was noted and passed along to the administrators for future consideration. Of the seven humanities volunteers four were chosen for the program.

USU and the UTVA administrators scheduled several meetings during the end of the spring 2011 semester to collaboratively work on the design of the virtual student teaching experience. The four volunteers were encouraged to attend these meetings to ask questions and add to the dynamic creation of this experience. Of the four volunteers selected, two were female and two male. One of the male student teachers had a hearing impairment that caused him trouble in a traditional brick and mortar placement. USU and UTVA were able to make arrangements for this student to complete his entire field placement in the virtual environment. This ability to be inclusive of difference highlighted an area that USU was eager to explore.

The pilot program was launched in August 2011 with a mandatory professional development workshop for the virtual student teachers. This was in conjunction with UTVA's professional development for current and new faculty. UTVA paid for the virtual student teachers to travel and stay in Salt Lake City for the weekend. By including the student

teachers in their own professional development seminar, the student teachers were able to meet faculty and administration, learn about the atmosphere of the school, as well as begin orientation on the curriculum and online learning platform. Student teachers then had a few weeks to play around with the online platform, ask questions of their cooperating teacher and be a part of setting up for the beginning of the school year.

By allowing student teachers time to get to know the curriculum, cooperating teachers, and the online learning platform, they were ready to jump into teaching on day one of the field experience, which was also the first day of the year. All four cooperating teachers felt it was imperative that the student teachers work with them from the beginning with contacting parents and participating in the daily communication. This allowed the student teachers the opportunity to get over some of the "parent anxiety" they had expressed as well as work on getting to know the students. During the virtual student teaching experience, the student teachers were responsible for:

- Daily student communication
- Office hours
- Weekly synchronous lecture and activities
- Daily asynchronous discussions
- Parent/Learning Coach communication
- Grading
- Student reporting for IEP (Individual Education Plans) and resource documentation

In addition to the above teaching duties, the virtual student teachers also participated in a student teaching seminar. This course is required during the student teaching practicum for all student teachers (virtual and traditional) and provides a space for continued practice and a forum for questions that occur during the semester in the field. For the virtual student teachers, USU was able to staff the course with an instructor with online teaching experience who was also able to act as the student teaching supervisor for the four virtual student teachers. The course was designed on USU's online course platform to offer modeling opportunities for the student teachers to participate in discussions. By designing the course completely online and utilizing discussion-based engagement, the course used a cultural circle model to allow for themes to emerge from the journal style entries that the student teachers would post on a weekly basis. As themes emerged that the student teachers were grappling with in their field experience, the seminar course would facilitate a deconstruction of the experience (there were both positive and negative themes), which allowed the student teachers to engage with each other's unique experiences. The seminar instructor, who received weekly recordings of the students' synchronous lectures and class activities through the Elluminate program that the Utah Virtual Academy uses, evaluated student teachers in the virtual program. Evaluation also included working closely with the cooperating teachers to ensure that the virtual student teachers had the opportunity to examine and experience as many aspects of online teaching as possible. After the seven week virtual experience, the same supervisor worked with the students in the traditional environment to facilitate the transition and to encourage an extension of the skills and experiences from the virtual environment into the physical. The seminar also provided feedback on the pilot experience for the student teachers, thus conveying a clear and deep sense of how the experience was going and what worked or needed to be adjusted for future cohorts in the virtual and the traditional, as well as the transition between the two.

The pilot program last fall was a fantastic experience for the student teachers, cooperating teachers, Utah Virtual Academy, and USU. Information gathered from the student teaching seminar gave critical feedback about how the program worked for the student teachers and provided several areas where improvements could be made for the future. Talking with cooperating teachers and administrators from the Utah Virtual Academy showed a deep commitment to teacher education in Utah and in the positive and meaningful experience online education is providing for students, teachers, and the community.

Current Status of the Program

Upon analyzing the data collected from the student teaching seminar and communication with the cooperating teachers and administrators at UTVA, USU decided to pursue a second virtual field experience. Feedback concerning the summer training was overwhelmingly positive, which prompted USU to follow the same timeline and offer only a fall semester hybrid virtual/traditional field experience for the 2012-2013 school year. The Office of Field Experience examined the suggestions for improvement that the pilot students gave in their reflections and went to work on adding to the experience. The positive feedback reached several of the content areas besides humanities, which provided the virtual program with the support of the Science Composite.

Instead of presenting the option in the Methods courses, as was done for the pilot, the Office of Field Experience sent out an informational email to students who would be ready for student teaching during fall 2012. The email provided a description of the virtual program and included a few sound bytes from the pilot students' experiences. Students interested in a virtual field experience were invited to an informational meeting with the Office of Field Experience and administrators from UTVA. Six students showed interest and four committed for the fall 2012 virtual field placement. Of the four confirmed for fall, three were Social Studies majors and one in Chemistry. Two of the Social Studies majors were focusing on the high school level, and one was specifically interested in the middle grades (6-8). This dynamic provided USU with additional information to broaden the understanding of student teachers in the virtual environment.

Currently, USU does not offer any courses specific to virtual or online teaching practices. Information on online teaching pedagogy comes from the seminar course that the virtual student teachers take in conjunction with their field experience. Students in the teacher education program do take a course through Instructional Technology and Learning Sciences that includes some information about online learning platforms, but the course is mainly focused on technologies used in a traditional classroom environment. In the course reflections provided by the four students in the pilot program, it was suggested that integrating virtual learning pedagogies into courses would be beneficial to both the traditional and virtual field experiences.

Findings from the pilot study also confirmed that offering a hybrid field experience with both virtual and traditional placements for student teachers provided a unique opportunity for the participants to gain valuable teaching experience in both venues. With the growing number of districts in Utah offering online courses for advanced placement and remedial education for high school students, and the explosion of online K-12 schools in the state, virtual teaching experience is a necessity. USU believes that ensuring its students have the opportunity to gain experience in these areas is vital to the education program.

Reflections

The virtual program at USU is currently a hybrid program offered during the fall semester for secondary (6-12) grades. This time frame is to allow for the additional training in the virtual environment used by the Utah Virtual Academy during the summer. USU would like to see the hybrid virtual/traditional field placement become a two-semester program that would include a broader range of composite areas other than Social Studies, as well as move into the elementary (K-6) grades. USU would also like to begin incorporating more online teaching pedagogy into methods courses to provide students with experiences that are becoming more common in the K-12 arena.

USU's hybrid field experience is a three-credit course that is an option for the required student teaching field experience. Including the virtual experience in a credit-bearing course provides an incentive and legitimizes the experience as an equally important field placement as the traditional. Feedback from the pilot students showed that they valued the experience and believe it helped them to understand many of the administrative nuances such as faculty collaboration, communication, and student/teacher interaction that may not be as strongly encouraged and enforced in the traditional placement.

Complaints of the virtual experience were to be expected. The greatest complaint was the "boxed" curriculum. In the student teaching seminar, the pilot students spent a couple of weeks examining why a "boxed" curriculum worked for online delivery and how to modify, augment, and be creative with what is given. This need for creativity is not specific to just the online environment; as states and the nation push for core curriculum, teachers will need to be better able to think outside the box and develop extra curricular aspects to their lessons to include all of their students. The pilot students reflected that they also felt more like a teacher in the traditional classroom rather than in the virtual classroom. Through extensive discussion deconstructing the feelings, experiences, and expectations of teaching, the student teachers found that they were prepared to be "in front" of students as opposed to the person who is in charge of teaching the class. This interesting phenomenon of "feeling like a teacher" is apparently tied to the way traditional classroom management and organization is taught, and learned through years of experience as students in educational settings. However, it does show that teacher education programs need to examine ways of being a teacher that push the pedagogy of teaching out of the front of the room and into the overall experience of educating.

Utah State University is excited about the progress that has been made to include a virtual student teaching experience in the teacher education program but realizes that this is just the beginning. Since online education in the K-12 arena is fairly new and growing at a phenomenal rate, it has become apparent that education programs must prepare future teachers for teaching in this environment. The number of difficulties in changing, adding, and reworking current courses to include pedagogies that are unfamiliar to those teaching these courses is proving to be a struggle. Online education has been accepted as a way of learning in higher education and has over the past decade grown to include pedagogy grounded in experience by and for professors, lecturers, adjuncts, and instructors. The K-12 online learning cadre of teachers is much smaller and in its infancy in comparison, however, there are some similarities that can be used across both paradigms.

Conclusion

IT IS EVIDENT THROUGH THE DEVELOPMENT OF PRE-SERVICE AND IN-SERVICE PROGRAMS DESIGNED TO PREPARE TEACHERS FOR ONLINE AND BLENDED CLASSROOMS, teacher education programs are beginning to realize that they share a responsibility in preparing teachers for online settings. However, this appears to be happening in a bit of a disjointed and isolated fashion across the country. What is clear is that through these visionary programs, the needs of educators, both pre-service and in-service, to learn to effectively implement and adapt teaching methods, content, and emerging technologies, are finally starting to be met. As other programs move in this direction, it is helpful for them to learn from the lessons learned outlined in this report. These include ensuring adequate institutional support and working to develop partnerships with virtual schools from the onset, in addition to keeping direct and open lines of communication with partner schools.

There appear to be common themes regarding what can be done to assist such programs in their development. First, the facilitation of partnerships appears to be a central need. No longer are higher education programs bound by geographic location to be able to make placements. However, this requires a new approach, one that allows for reciprocal agreements for licensure and/or background checks and fingerprinting requirements. Mutual understandings and reciprocity across states so that teaching certificates and/or background checks can be accepted from one state to another would significantly assist the ability to place teachers in virtual programs from across the nation. A searchable database, including location, course level, subject area, along with requirements for placement would be a helpful addition as programs seek to find adequate partners to be able to offer a field experience component.

Another area of need is for there to be common research-based guidelines, resources, and strategies provided so that teacher education programs have a clear focus on the knowledge and skills that need to be fostered among teacher candidates. Specific guidance from virtual schools on the structure and content of the programs would be helpful to ensure adequate preparation for teaching in online and blended settings. This might include adoption of a common set of teaching standards, such as those developed by iNACOL, to ensure commonality across programs. Another helpful resource would be the development of an online repository of open education resources (OERs) designed to assist with preparing pre-service and in-service teachers for K-12 online learning. These resources could be utilized by teacher education programs and virtual schools alike, and would serve to supplement materials developed by individual entities.

In many ways, the teacher education programs profiled in this report, represent the cutting edge of preparing teachers for 21st century classrooms. Increasingly, as a function of the digital age in which we live, teachers will need to be able to teach effectively in online and blended settings. An important part of achieving this goal is for post-secondary institutions to work together with course providers to provide both coursework as well as relevant field experiences so that teachers are able to hone their skills prior to entering the online classroom for the first time. Now, more than ever before, programs are beginning to address the needs of these educators. However, additional work to develop quality, research-driven and needs-based professional development is essential as the field of education experiences continued disruption in a positive and transformative direction. As part of this transformation, the role of the teacher is ever-evolving, and this presents a renewed challenge. To meet this need, higher education must also transform to adapt their programs, providing necessary preparation for effective instruction in online and blended classrooms.

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Editor and Contributor Biographies

Archambault, Leanna – Dr. Leanna Archambault is an assistant professor of educational technology in the Mary Lou Fulton Teachers College at Arizona State University. Dr. Archambault's research areas include teacher preparation for online and blended classrooms as well as the nature of technological pedagogical content knowledge. Most recently, she has collaborated on the Hartwell Education Initiative to create and study a newly developed blended course, Sustainability Science for Teachers. This year, she won the Online Learning Innovator Award for Outstanding Research from the International Association for K-12 Online Learning. Prior to taking her position at Arizona State University, Dr. Archambault graduated from University of Nevada Las Vegas with a Ph.D. in instructional and curricular studies. As a former middle school English teacher, Dr. Archambault is passionate about improving the education, particularly through the use of relevant and emerging technologies.

Barbour, Michael K. – Dr. Michael K. Barbour is the Director of Doctoral Studies for the Isabelle Farrington College of Education and an Assistant Professor of Educational Leadership at Sacred Heart University. He has been involved with K-12 online learning for over a decade as a researcher, evaluator, teacher, course designer, and administrator. His research has focused on the effective design, delivery, and support of K-12 online learning, particularly for students located in rural jurisdictions. Recently, Dr. Barbour's focus has shifted to policy related to effective online learning environments. This has resulted in invitations to testify before House and Senate committees in several states, as well as consulting for Ministries of Education across Canada and in New Zealand.

Goon, Dean – Dr. Dean Goon has more than 20 years of direct (face-to-face, online, and blended) classroom experience. He has taught at the elementary, middle school, high school, and university level. His focus of teaching expertise is on educational technology and effective teaching methods. He has facilitated hundreds of professional development workshops for educators. He has coached, consulted, and inspired all types of teachers and instructors to improve their pedagogy with simple solutions. Providing simple, useable, and practical educational solutions to stakeholders to innovate and engage students is his priority. He frequently presents nationally on topics of emerging technology and innovative educational solutions for online, blended, and face-to-face instruction. Currently, Dean is an Assistant Professor of Education and Director of Instructional Technology at Mount Vernon Nazarene University. In addition, Dean is the founder of *MakeADent* Educational Solutions where he provides professional development and consulting for P-20 institutions.

Hynes, Michael - Dr. Michael Hynes, a Pegasus Professor at the University of Central Florida (UCF), has varied professional interests related to mathematics education, science education, the use of technology in instruction, problem solving, and improving the preparation of teachers. He has been very active in obtaining external funding for research. He has received over $5,000,000 in funding in the last ten years. Most recently, he is a member of the R&D team for TLE TeachLivETM, an avatar-mediated simulation of a public school classroom. Professor Hynes is the founding director of the Lockheed Martin/UCF Academy for Mathematics and Science. This endowed program prepares teachers of mathematics and science from elementary and middle schools for leadership roles in the improvement of mathematics and science teaching. Currently, he is Director of the School of Teaching Learning and Leadership and Associate Director of the SREAL Laboratory.

Kennedy, Kathryn – Dr. Kathryn Kennedy is the Director of Research for the International Association for K-12 Online Learning (iNACOL). In this position, she is responsible for providing multiple venues for disseminating research, establishing an annual research agenda, and conducting, coordinating, and disseminating research studies to help inform the field of K-12 blended and online learning.Her practical experiences include pre-service and in- service teacher, technology specialist, and school librarian professional development for technology integration and instructional design in traditional, blended, and online learning environments. Her research interests deal directly with her practical experience and concentrate mostly on education professionals and their preparation for next generation learning models, including but not limited to online and blended learning environments. Kennedy holds a Ph.D. in curriculum and instruction with a concentration in educational technology from the University of Florida.

Parent, Robin – Robin Parent is the Inclusive Excellence Instruction Specialist at California State Polytechnic University, San Luis Obispo. She has been a lecturer in the English Department and the College of Education at Utah State University in Logan, Utah, since 1999. She has taught a wide variety of courses onsite and online, including composition, graduate-level feminist theory, student teaching seminars, and Language, Culture and Diversity in Education. She designed and implemented a virtual student teaching field placement for elementary and secondary education students at Utah State. She served as faculty advisor to the campus multicultural sorority. She is preparing to defend her dissertation in Cultural Studies in the College of Education, Curriculum and Instruction this fall, where she has been working in the Teacher Education and Leadership program.

Rice, Kerry – Dr. Kerry Rice is Associate Professor in the Department of Educational Technology at Boise State University, a fully online graduate program and a leading provider of K-12 online teacher preparation in the U.S. She is author of *Making the Move to K-12 Online Teaching: Research-Based Strategies and Practices* (Pearson, 2012) and the recipient of a 2012-2013 Fulbright Scholar Award. She led the development of the Idaho K-12 Online Teaching Standards and Idaho's K-12 Online Teaching Endorsement and is Coordinator of the K-12 Online Teaching Endorsement program. Her research focuses on best practices in K-12 online education with articles appearing in the Journal of Research on Technology in Education (JRTE), the *Journal of Educational Technology and Society* (JETS), and the *British Journal of Educational Technology* (BJET), among other publications. She has presented on best practices in K-12 online teaching at numerous national and international conferences including those of the *International Association for K-12 Online Learning* (iNACOL), the *Association for Supervision and Curriculum Development* (ASCD), the *Society for Information Technology and Teacher Education* (SITE), and the *American Educational Research Association* (AERA).

Vyortkina, Dina – Dr. Dina Vyortkina is the Director of the Office of Information and Instructional Technologies (OIIT) in the Florida State University College of Education. In this role, she works with faculty, staff, and students embedding technologies into all aspects of education and business operations of the College.Dr. Vyortkina has been involved in design, development, delivery, and improvement of online courses and distance learning programs since 1997. Her expertise includes, but is not limited to instructional design, adult learning, information technologies for educational leadership/administration and school principals preparation, teacher preparation in the area of blended and online learning and teaching, technology-enhanced learning, teaching, assessment and research, faculty professional development, change management, and technology integration in higher education. Since 2010 she was instrumental in developing and is currently coordinating and teaching in the FSU teacher preparation program in blended and online learning and teaching (BOLT), comprised of four, fully-online courses: Foundations of BOLT; Pedagogy for BOLT, Technologies; and Trends, Issues, and Practices in the area of BOLT. Dr. Vyortkina has teaching experience in Kazakhstan, United Kingdom, and United States. She was involved in distance education and professional development in US (1997-present) and in UK (2006-2008).

Yang, Dazhi – Dr. Dazhi Yang is an Assistant Professor in the Educational Technology Department at Boise State University. She obtained her Ph.D. in educational technology (now Learning Design and Technology) from Purdue University, West Lafayette, Indiana. Prior to coming to Boise State, she was a postdoctoral researcher and instructional designer in the School of Engineering Education at Purdue. Her current research focuses on instructional strategies and online course design techniques for STEM subject areas; instructional strategies for teaching difficult and complex science and engineering concepts with the assistance of technology, which was supported by the National Science Foundation (NSF); and teacher education and professional development. Due to her interest and background in teacher education, Dr. Yang coordinated the K-12 Online Teaching Endorsement Program at the Boise State University and was in charge of developing and implementing the newly established endorsement program. She was a featured researcher at the 2009 Association for Educational Communications and Technology (AECT) International Convention in Louisville, Kentucky, and received the 2009 Young Researcher Award from the American Educational Research Association (AERA), Special Interest Group (SIG): Instructional Technology (IT).

Zajac, Janet – Janet Zajac is an instructor and clinical coordinator in the College of Education and Human Performance at the University of Central Florida. She has a wide array of responsibilities connected to the clinical supervision of interns during their final year in the education program. Her duties include training over fifty clinical coordinators who observe and evaluate the pre-service teacher candidates in local schools, and overseeing the coordination of approximately one thousand interns each semester. She was instrumental in the creation and implementation of the Teacher Work Sample, a data based analysis of student learning which provides direct evidence of the teacher candidate's impact on student achievement. This is completed during the teacher candidates' final internship and is now a graduation requirement. She is active on many college committees, including program accreditation.

Zugelder, Bryan – Dr. Bryan Zugelder has worked at state and local levels on policy regarding teacher preparation, assessment, accountability, professional development, and higher education. He currently serves as the Executive Director of Undergraduate Affairs and Partnerships in the UCF College of Education and Human Performance, overseeing a staff of 23 employees, impacting 5,700 students, 150+ full time faculty, and 455 public schools in the Central Florida region. His leadership results in partnerships with community constituents, student affairs practices for the largest school of education in Florida, and an award-winning, national model for clinical teaching practices and professional development schools. Dr. Zugelder has published in the *International Journal of Mentoring and Coaching in Education*, *Childhood Education*, *ACEI Focus on Pre-K & K*, and the *Florida Association for the Gifted*. He has worked as a state-wide professional development professional, and as a project manager for a state-wide assessment initiative. Dr. Zugelder earned a Bachelor of Science in Elementary Education, a Master of Science in Educational Leadership/ Administration, and a Doctor of Education in Organizational Leadership, with a specialization in Conflict Resolution.