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# Integration of Interactive Instructional Technology in the Teaching Credential Program: A Case Study

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Atlanta, February 15-19, 2013  
Living and Learning Across a Lifetime

1. **Title:** “Integration of Interactive Instructional Technology in the Teaching Credential Program: A Case Study”
2. **Type of Presentation:** Multiple Paper
3. **Objectives of the Presentation:**

This paper session seeks to share the initial findings of a case study investigating the effects of the integration of new, instructional technology in a teaching credential program. Specifically, we will discuss pre and post survey results measuring beginning credential candidates’ perceived levels of proficiency using instructional tools, their opinions regarding the importance of those competencies, and the level to which they would like to learn more about using technology in the classroom before and after participation in a newly designed *Using Technology in the Classroom* course. Further, this session will share observation results of these students in the field applying the new instructional tools with their students. This includes perceived levels of student engagement and student learning outcomes that are a result of the instructional technology used. Lastly, the session intends to engage in a collegial discussion regarding the effective use of instructional technologies and the emergence of 21<sup>st</sup> Century skills in education.

4. **Relationship to Conference Theme/Strands:**

This paper session directly reflects the theme of lifelong learning and technology use. It investigates not only credential candidates’ perceptions regarding technology, but also the perceived effect its use has on their students in the field. Students in today’s 21<sup>st</sup> Century classroom live in a digital world. High school graduates must master the content of their courses as well as the emerging technologies that produce, house, and disseminate such knowledge. Teachers have to not only teach their subject and display appropriate social and professional behavior, but also model appropriate use of technology. One might expostulate that the day of “chalk and talk” classrooms are extinct. As such teacher education programs must mirror this evolution to better connect and engage modern high school students, preparing them for a lifelong relationship with emergent technologies.

5. **Abstract of Presentation:**

Many teachers today are facing digital natives in the classroom. Their students do not know the world without the world-wide-web. Their methods of communication, socializing, entertainment and research all circle around a common core of technology. Despite this emergence of 21<sup>st</sup> Century skills, too often pre-service teachers are not offered “adequate time to absorb, reflect about, connect with, and be supported by technology” (Edutopia.org, 2011, ¶ 1). Arguably, in order for teachers to obtain the level of technological expertise necessary for today’s classroom, the greatest opportunity to make drastic improvements is to include this focus in pre-

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service education programs. It should be modeled and integrated as a common thread throughout the student teaching experience, not relegated to lectures on technology in a single course or through hit or miss training on site during their student teaching semester. Indeed, 2011 California Commission on Teacher Credentialing data indicate that California credential completers' weakest areas are the use of computer-based applications to help students learn curriculum subjects, and the use of computer-based technology in class activities (Commission on Teacher Credentialing, 2011).

To address this deficit, two faculty members in the single subject credential program at Dominican University of California applied for and received a Strategic Initiative Fund Grant in the Fall of 2011 to fund the purchase of key technologies credential candidates will encounter in the field. The grant also provided professional development for the two faculty members. Specifically, the faculty members purchased two Mobi-View Instructional Interactive WhiteBoards, three Mobi-View Student Centered Learning Packs, a 33-piece Student Response System, two Elmo Document Cameras, professional development opportunities from eInstruction, and the opportunity to attend the California Educational Technology Professionals Association Annual Conference, further enhancing their understanding of technology use in the classroom.

Empirical research supports pedagogical advantages of these technologies in K-12 and higher education settings (Penuel, W. R., Boscardin, C. K., Masyn, K., & Crawford, V. M., 2007). For instance, findings of multiple studies indicate that "student response systems promote learning when coupled with appropriate pedagogical methodologies . . ." (Fies, C., & Marshall, J., 2006, p. 101). Further, Mobi-View mobile smart board systems have been found to create statistically significant positive effects on student learning in small groups as well as teachers' abilities to effectively differentiate instruction (Marzano, R. J., & Haystead, M., 2009). The key is to offer hands-on experience with appropriately trained faculty.

The two faculty members began implementing the new technologies gradually, first modeling their use to credential candidates during the Spring 2012 semester, and then revising the *Using Technology in the Classroom* course to include explicit direction in their use. Faculty also developed a pre and post survey measuring beginning credential candidates' perceived levels of proficiency using instructional tools, their opinions regarding the importance of those competencies, and the level to which they would like to learn more about using technology in the classroom. This pilot study will also include focused observations of these credential candidates' student teaching during the Fall 2012 semester to gauge the effective use of technology in the field as indicated by students' perceived engagement and their ability to achieve student learning outcomes. Previously, student teacher supervisors were not required to evaluate the effective use of technology in the field. Results of the surveys and observations will help guide the teacher education program's next steps in incorporation of instructional technologies.

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Considering this is a pilot case study of one credential program, the intent is not to disseminate new theory or practice, but to explore one proposed method of attaining 21<sup>st</sup> Century Skills in our school of education. We seek to share our proposed approach to reaching that goal, discuss initial findings and their significance to the field of teacher education, and discover new directions for future research and program implementation.

**6. Relevance or Implications of Topic:**

Today, integrating instructional technology has become a key approach to engage students and keep them on task. This in turn has the potential to reduce behavior problems and increase learning. Considering California credential candidates are weakest in the area of technology-based instruction, it is imperative that teacher credential programs include meaningful use of instructional technology in their course and fieldwork.

How this paper contributes to the growing body of research on instructional technologies is threefold. First, it represents a cultural shift in a teacher credential program that historically did not embed technology in a meaningful way. Initial findings of this case study will inform similar programs on the implementation process. Secondly, this case study directly reflects the emergent skills necessary for the 21<sup>st</sup> Century classroom through a focus on collaboration, cooperation, communication, and innovation through technology.

And lastly, focused observations of teacher candidates in the field implementing these new technologies will uncover the extent to which their student learning outcomes have been achieved and gauge the level of student engagement both with and without the use of instructional technologies.

**7. Description of Audience Participation:**

Participants will have exposure to one credential program's approach toward incorporating 21<sup>st</sup> Century Skills through the implementation of interactive instructional technologies. Presenters will model the use of these technologies during the presentation, discussing initial results of the case study. Participants will also have the opportunity to share their views and interests in developing meaningful and effective approaches toward embedding instructional technologies in teacher credential programs.

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References

- Beatty, I. D., & Gerace, W. J. (2009). Technology-enhanced formative assessment: A research-based pedagogy for teaching science with classroom response technology. *Journal of Science Education & Technology*, 18, 144-147.
- Commission on Teacher Credentialing. (2011). <http://www.ctc.ca.gov/briefing-room/default.html>
- Edutopia. (2011). "Why Integrate Technology into the Curriculum?: The Reasons Are Many." <http://www.edutopia.org/technology-integration-introduction>
- Fies, C., & Marshall, J. (2006). Classroom Response systems: A review of the literature. *Journal of Science Education & Technology*, 15, 101-109.
- Marzano, R. J., & Haystead, M. (2009). "Final report on the evaluation of the Promethean technology".  
[http://www.prometheanworld.com/upload/pdf/Final\\_Report\\_on\\_ActivClassroom\\_%282%29.pdf](http://www.prometheanworld.com/upload/pdf/Final_Report_on_ActivClassroom_%282%29.pdf)
- Penuel, W. R., Boscardin, C. K., Masyn, K., & Crawford, V. M. (2007). Teaching with student response systems in elementary and secondary education settings: A survey study. *Educational Technology Research & Development*, 55, 315-346.