Guest Editorial Preface
Bringing Games and Simulations into Teacher Education

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Games and simulations are serious new tools for learning. They can achieve dramatically higher levels of emotional power, interactivity and effectiveness for learning, compared to traditional resources such as books, lectures, videos, and student-produced artifacts such as reflection papers, student research, and tests and quizzes. Among their key advantages are seamless integration with online resources, embedding of complex models to be discovered and acquired via mastery, and high-resolution time-based data for analysis of learning. As a result, games and simulations can effectively engage students in direct experience with the causal mechanisms and structures of systems, and through experiment and discovery, assist people in acquiring higher order knowledge and skills. Airline pilots, for example, train in simulators and return to them to renew and further develop their experience base. The military extensively uses digital games to provide scalable, uniformly high quality training exercises. Medical schools are rapidly developing simulations for a wide variety of educational purposes. Therefore, the time is right for schools of education to get serious about games and simulations in teacher education.

However, as an emerging field, where should people go to see the best practices enacted and producing interesting impacts? What implications from research should guide decision-making? Are there minefields to be avoided, and can people find out what not to do, to avoid making the mistakes that others have made? How can educators begin to build a collaborative foundation for sharing experience? If there are no “best practices” yet, then how can we co-invent the “next practices?” An essential question is “What should institutional advancement leaders, deans and department leaders know and do in schools of education to ensure robust use of games and simulations in teaching and learning?” That is the subject of a new Handbook on Games and Simulations in Teacher Education, being developed by a collaboration among the American Association of Colleges of Teacher Education (AACTE), the Society for Information Technology and Teacher Education (SITE), the National Technology Leadership Coalition (NTLC) and its several professional membership organizations, the subject area leaders in teacher education.

The project is breaking rank with some of the traditional ways that publications are created, which is normally accomplished by a single author or team, or as a collection of chapters edited by an author or team. Instead, we are trying to conduct a crowd-sourced brainstorm and extended compilation of ideas, which will then be shaped by editorial teams working...
on sections. We have chosen this method in order to get the broadest possible input to the essential questions and to allow the boldest possible ideas to be expressed and organized into a comprehensive but brief practical outline for leaders to use to stimulate conversations in their organizations. The goal is not to produce a highly referenced work in an academic tone, but to give pragmatic advice from the field of experts and adherents to begin the conversations and organizational journeys needed to speed up and manage a change process that to many seems inevitable.

The Handbook will thus not be intended to convince anyone of the need for the new game changing directions. It will be aimed at leaders and others who already sense the change coming and are looking for rapid development of knowledge and programmatic innovations to propel their faculties into action.

The sections coming into shape include:

1. Conditions for Improvement: What do schools of education need to have in place to promote the use of games and simulations in the preparation of future teachers? Three areas seem important - leadership, incentives & supports. Leadership ideas include the concept of achieving an “epic win” for the college or school of education by transforming the program to infuse and leverage games and simulations, which involves changes in beliefs about the potential of new technologies, skillful action in hiring and supporting talented innovators, and establishing an environment where risk-taking and collaboration leads to transdisciplinary research, teaching and service. Specific ideas include recognizing and rewarding new forms of design-based research as well as collaborative production of new applications. Support structures include ideas such as providing focus and impetus for setting up and funding ongoing transdisciplinary research, teaching and design teams.

2. Teacher Educators: What should faculty of education do? This section will explore key ideas for potential research, for example, the sociocultural, cognitive, and technical research opportunities and their impacts on teaching, learning, assessment and organization. The section will also broadly outline what good teaching looks like with games and simulations in a teacher education context.

3. Program Experiences: What learning experiences should future teachers have? This section will outline how teacher education programs can ensure that teachers are prepared technically, pedagogically, and with conceptual subject area depth to effectively use simulations and games in their teaching practice. This preparation includes possessing experience and evidence-grounded attitudes, beliefs about the power of games and simulations, as well as effective practices that have been honed through repeated trials and feedback. Examples include simulations OF teaching, such as simSchool, that operate as flight simulators to develop teaching skills; games and simulations and platforms utilized FOR teaching, such as 3D Game Lab, Civilization, DimensionM, and Quest Atlantis; and game-like platforms AS teaching, such as Fab@School, Scratch, Kodu, Gamemaker and other construction platforms, as well as OpenStudy and other emerging badge-based peer-to-peer applications.

4. Knowledge: What do K-12 Teachers Need to Know? If the graduates of an ideal program are to be among the best teachers in the world, the Handbook asserts that they need to know how to teach with games and simulations, and which ones they prefer to use on day one of their career. In order to function at this level, what do preservice teachers need to know and be able to do with games and simulations?

The Handbook project has used three phases of input thus far. First, the NTLC Committee on Games and Simulations met in September 2011 and laid out the outline of the project. Members expressed an interest in
authoring, reviewing, critiquing and shaping the work. Then a call for chapters went out in November 2011, which expanded the group of potential authors and contributors. Third, at a keynote address in the virtual world “Second Life” at the 2012 Virtual Worlds Best Practices in Education conference in March 2012, an open brainstorm by contributors was collected in four online documents, which will be shaped into a final document by the authors. A listing of all contributors will include the acting committees of the partner organizations, section editors who have taken primary responsibilities, and all contributors who have offered suggestions, given an example, or raised a question that has helped the project take shape. If you would like to join in the discussion and writing, please visit the draft at: http://bit.ly/HL4LEG.

Much progress is being made today in bringing the power of games and simulations into new learning tools and experiences. The Handbook project aims to provide a digestible set of clear and useful guidelines and ideas that will stimulate the deeper conversations needed to make more rapid progress in integrating games and simulations into the “next practices” in teacher education.

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