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The Integration of 21st Century Competences in the United States Educational System

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Introduction

Since the introduction of the personal computer in the early 1970s, information and communication technologies (ICT) have greatly changed the way people work, interact and communicate. These innovations include any communication device or application, such as radios, televisions, cellular phones, computers, networks, video teleconferences (VTCs), and collaborative presentation tools. With the creation of these advances in information technologies, the way human beings live, work and learn is continuously evolving. These changes have resulted in new dynamics and relationships in education, resulting in the creation and development of new learning environments. However, ICTs have also created great challenges that negatively affect the educational systems and students' preparation for the rapidly changing job market (Voogt, 2012, pg 300). This preparation requires the acquisition of the 21st century competencies, which can be categorized into five broad categories: (1) analytic skills, (2) interpersonal skills, (3) ability to execute, (4) information processing, and (5) capacity for change/learning. These competencies each possess the following characteristics:

- (a) Transversal - they are relevant across many fields,
- (b) Multi-dimensional - they include knowledge, skills and attitudes,
- (c) Higher order skills and behaviors - they represent the ability to cope with complex problems and unpredictable situations (Voogt, 2012, pg 300).

Over the last three decades, there have been initiatives both raising concerns and responding to these concerns about the preparation of young people to perform well by learning and obtaining these competencies. There is agreement between policymakers and researchers across the Organization for Economic Co-operation and Development (OECD) stating that these competencies are important for workers in the 21st century. However, there is a lack of clarity as to whose responsibility it is in the United States to address and integrate these competencies in the educational system. What strategy offers the most assured method of change to transform the United States educational curriculum? Should it be the national government, state governments, or local school districts acting as the change

agents?

There is a significant issue that needs to be addressed: a universal lack of technology resources. The development of a strategy to integrate the 21st century competencies and integrate the ICT technologies into existing curriculums is a complex issue, challenging all levels of government. This reflection paper suggests an approach that accomplishes this integration of ICT competencies across existing curricular competencies. The problems with existing curriculum must first be examined, and then the lack of resources can logically be addressed

Existing Curriculum & Lacking Resources

Global education is highly important to the development of a 21st century students and future workers; however, many schools throughout the United States are not promoting the needed global ICT competencies. The development and integration of the 21st century ICT competencies into the existing curriculum faces many challenges. Most educators still believe that performing well on “less demanding multiple choice tests requires teaching *only* the factual knowledge and routine skills such as taking tests. However, research shows that to be false.” (Jerald, 2009, pg 69). These simple tests do not require any of the skills listed in today’s job wanted ads. Therefore, the challenge is not simply to discover which activities nurture global competencies, but also to develop a strategy to integrate activities into everyday schoolwork and aligning them with existing curriculum, assessment and opportunities for the professional development of teachers.

A considerable amount of time is needed to foster support from various educational constituencies. Additional time is needed to implement and evaluate targeted programs for formal and informal education. Assessment and accountability systems should be re-established to address the appropriate learning of the application of ICT information to authenticate their subject content. Although ICT is an essential tool for students to use in problem solving, ICT should also be utilized for delivering instruction and professional development to teachers. Instructional topics and teacher preparation should then be aligned to evaluate

students in ICT education measured by standards. The bottom line is that primary school and high school education need to modernize their paradigms to use, teach and refine these competencies. While there is strong evidence that this is happening in the higher income school districts, the large majority of our schools have deferred this investment in technology education.

Another concern with existing curriculum is that teachers, when trying to incorporate new 21st century competencies, often spend too much time and effort on teaching material that is not in line with the real world demands that the 21st century competencies offer (Jerald, 2009, pg 70). Additionally, with the introduction of teaching 21st century competencies, it is difficult to streamline their programs across the United States. If teachers are not teaching the right ICT competencies correctly, students lose out. The best instructional approaches, the best teaching practices, and the best course content must be identified and made available to all schools. This is inhibited by the lack of a unified educational strategy as well as a lack of technology resources.

Recommended Approach

According to the Bureau of Labor Statistics, “jobs that require computer and math skills are each projected to grow by more than 20 percent in the next decade - and that is not limited to just the traditional technology and engineering jobs,” (Bracamontez, 2011). Technology will transform the professional life of students as well as, granting them more opportunities and possible scholarships to enable them to fulfill their passions and dreams. A key ingredient to obtaining success in making technology fun and exciting to learn is to develop a strategy that makes for a creative use of social media platforms such as Twitter, Linked-in, Facebook, and blogs. A viable concept is to use the PC and iPad rather than books and paper as the primary delivery mechanism for assignments, material and student-teacher communications. However, the key question remains, “How can this be done across schools when there is a great lack of resources?” Note: A mini iPad (\$329) costs much less than the books and the book administration needed for one student in a year (\$800).

Infusing technology into disciplines and across subject areas is extremely relevant to the future lives of every student. In addition, technology makes the learning process more engaging and stimulating – just ask any person under the voting age. Selecting and developing content that leverages technology enables students to learn key skills that are not only useful in their everyday lives, but helps them to develop skills for future careers. Computer literacy is instrumental in the development of other needed skills - problem solving, analysis and logic as well as software and hardware. Assessment tools must be developed to evaluate a student's ability to use technology for learning, critical thinking, and problem solving as well as a medium for learning. The incorporation of 21st century competencies will develop students' qualitative and quantitative information skills, equipping them to design solution strategies for critical problems. ICT broadens students' perspective on real world issues. Social media tools such as Facebook enables students to rapidly socialize with their peer groups sitting alone at their PCs and iPads.

Other ways to incorporate the 21st Century Competencies are through educational programs outside of the classroom. Characteristics for strong youth leadership educational programs seem to arise repeatedly in literature such as Schoenberg and Salmond, who identify core elements of youth leadership: youth engagement, youth-driven, youth participation, youth voice, and youth action (Schoenberg, Salmond, 2007). Some approaches that can be taken to incorporate the use of 21st Century Competences and leadership in education could be the following:

1. Maximize access to the shared resources of projects sponsored by public and private sector organizations and institutions.
2. Strengthen capacity of existing and evolving programs by sharing promising practices, research, and program models as well as outcomes; this is achieved by prudent insertion of key technologies such as social websites.
3. Use the leverage of a network or collaboration of individual programs focused on international and cultural aspects.

By leveraging these educational programs, schools with lesser resources can more fully integrate in the 21st Century Competencies. This requires a stronger

relationship between community organizations and international organizations that frequently work with youth and have the capacity to develop new partnerships. By employing technology to teach innovative curriculum to students in educational programs before they enter the working world, their ability to attain rewarding lifetime work is significantly increased. The United States is behind in adapting its educational system from the past; it is time to revamp our educational curriculums to provide skills for the future of our country's workforce.

Work Cited

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