21st CENTURY LEARNING
An Annotated Bibliography

Prepared by
Bozena Grymek-Nowinowski
CEC Professional Library
Toronto Catholic District School Board

February 2014

All listed material are available in the
Professional Library, Catholic Education Center
Tel: 416-222-8282 ext. 2406

Joanne Melo
Program Co-ordinator
Literacy and Library Services (K-12)
Curriculum and Accountability Team/Student Success Team

This article features Point Road School, a pre-K-4 school in New Jersey that enhances student learning by integrating new and emerging technologies into the curriculum. Point Road School's technology story began in 1996 with a grant for a classroom modem so students could email their university literacy buddies. The New Jersey school has moved from a glimmer of a technological vision to a focused movement in which the staff work collaboratively toward a common goal of preparing students to be high performers in the 21st century. The staff are committed to thoughtful and planned use of present and emerging technologies, believing that technology promotes creativity, provides opportunities for real-world learning experiences, stimulates lifelong learning, and enhances students' overall competencies. The school's vision focuses on enabling the students to become skilled, knowledgeable, independent, and self-directed learners who are comfortable with and proficient in using technology in all its forms.


The article explores the impact of web-based instruction on the academic achievement of students. Information is provided on the growing development and support of virtual schools in the U.S., noting that supporters of such educational technology cite benefits such as individualized instruction, lower costs, and home schooling. However, the author states that a lack of research exists to provide an adequate view of virtual education. Other topics covered include educational accountability, U.S. government policies towards online learning, and digital technology.


Project-Based Learning (PBL) is an innovative approach to learning that teaches a multitude of strategies critical for success in the twenty-first century. Students drive their own learning through inquiry, as well as work collaboratively to research and create projects that reflect their knowledge. From gleaning new, viable technology skills, to becoming proficient communicators and advanced problem solvers, students benefit from this approach to instruction.


The article focuses on the need to integrate technology in the classroom for students’ in the 21st century. According to the Partnership for 21st Century Skills organization, the most effective way is to develop the four C’s such as critical thinking, creativity, and collaboration
and acquiring students in technology-infused learning environment. It also discusses several related topics including the potential device, internet search discovery, and creating a multimedia presentation.


This article describes how third graders combine traditional literacy practices, including writer's notebooks and graphic organizers with new literacies, such as video editing software to create digital personal narratives. The authors emphasize the role of planning in the recursive writing process and describe how technology-based audio recordings using iPods and LiveScribe pens allow students to narrate, critically evaluate, and revise their stories before writing first drafts. The authors discuss the benefits of integrating recorded oral rehearsals into the writing process and explain how, with peer conferencing and teacher support, the audio drafts evolve into multiple written drafts, storyboards, and iMovies. Creating digital stories that are shared with proximate audiences (e.g., classmates and families) and distant, sometimes unknown audiences through a class blog, provide students with meaningful, engaging, 21st-century opportunities to communicate ideas through the use of multimodal resources.


In today's workplace, the ability to solve complex problems, think critically, and engage in continuous, self-directed learning is essential. Recognizing that providing the kind of education that fosters such abilities necessitated considerable change in its schools, the Archdiocese of Philadelphia's Office of Catholic Education developed a strategic plan focusing on the 21st-century learner. The plan focuses on three areas for growth: Catholic identity, academic excellence, and sustainability. Within academic excellence, the plan targets transforming classroom practice, emphasizing rigorous and relevant instruction, interdisciplinary learning, and the use of data to inform instruction. Teachers are the linchpins to the plan's success. To align professional development with the strategic plan, the Office of Catholic Education partnered with Catapult Learning, a professional development services provider, to design a comprehensive, three-year plan to support teachers and administrators as they learned new approaches and put their learning into action.


The article examines how teachers can use educational technology to improve lessons and provide more in-class time for discussions. The authors suggest that more time be devoted to activities that lead to deeper knowledge rather than simply cover basic material. Noted benefits of educational technology include leveraging class time, restructuring learning activities, and providing opportunities for rigorous instruction. In addition, information is pro-
vided on teaching methods designed to effectively use technology such as formative assessment websites, flipped classrooms, and feedback provided online.


The Global Positioning Systems (GPS) receivers and other geospatial tools can help teachers create engaging, hands-on activities in all content areas. This article provides a rationale for using geospatial technologies in the middle grades and describes classroom-tested activities in English language arts, science, mathematics, and social studies. Using geospatial tools expands the scope of topics that students can explore and promotes interdisciplinary learning.


This article looks at the relationship between online social networks and education. Information is provided on U.S. court cases which address the role of schools in monitoring students' online activity, noting cases such as R.S. v. Minnewaska Area School District No. 2149, J.S. v. Bethlehem Area School District, and Layshock v. Blue Mountain School District in which freedom of speech rights were claimed as defense for online comments regarding school faculty. Information is also provided on policies regarding teachers' use of social networking websites such as Facebook.


The article explores the national standards implemented by the government, which on cultural and structural changes required to ensure students benefit from their school experience. It looks at the schools in New Zealand, in which change in its educational system, could make a significant contribution to developing the country's capacity for imagination, creativity and innovation. It mentions that the strategy involves learning from past issues that contributed to school failure.


Evidence-based practice in education entails making pedagogical decisions that are informed by relevant empirical research evidence. The main purpose of this paper is to discuss evidence-based pedagogical approaches related to the use of Web 2.0 technologies in both K-12 and higher education settings. The use of such evidence-based practice
would be useful to educators interested in fostering student learning through Web 2.0 tools. A comprehensive literature search across the Academic Search Premier, Education Research Complete, ERIC, and PsycINFO databases was conducted. Empirical studies were included for review if they specifically examined the impact of Web 2.0 technologies on student learning.


The goal of this investigation was to explore how a fourth grade teacher could integrate iPads into her literacy instruction to simultaneously teach print-based and digital literacy goals. The teacher used iPads for a three-week period during her literacy instruction and selected apps that provided unique approaches to helping the students meet their literacy learning goals. An explanation of how to develop lessons that meaningfully integrate iPads is presented, as well as lessons learned from the project. Considerations for integrating tablets, such as the iPad, into literacy instruction are provided. Because iPads and similar tablets are relatively unexplored as tools for literacy learning, this work may provide a foundation for teachers and leaders making decisions about whether mobile devices such as these can be useful in literacy classrooms.


This digital world calls for changed mindsets about schooling, teaching, learning, and assessments and engaged teaching matters more than ever. Combining inquiry and technology opens the door to powerful new teaching and assessment practices that result in documented benefits for learners. To realize these benefits, teachers need support in making major shifts in their practice: how they work with disciplinary knowledge, how they design for learning and assessment, and how they embrace technology. It is time for top-down approaches to schooling to give way to the active, engaged, and collaborative teaching and learning relationships made possible by new educational technologies.


The article provides information on a rubric of effective teacher technology use developed by the author and educator Nathan Mielke based on the Framework for Teaching domains developed by educational consultant Charlotte Danielson. Aspects of the rubric including designing lessons based on available digital technology resources, demonstrating a positive attitude toward educational technology, and using online communication methods such as blogs, social networks, and electronic mail (e-mail) to inform students and parents.

In this article, the authors propose four principles to guide teachers’ thinking as they use technology to support teaching and literacy learning in 21st century classrooms. Specifically, teachers must be aware of emerging technologies, recognize the complexities of new literacies, realize tech-savvy students may not be skilled readers and writers of web-based texts, and develop assessments to evaluate 21st century skills. Keeping these principles in mind will help teachers prepare students to become effective readers and writers of digital texts.


The article presents information on the educational resources provided by Khan Academy, a website which offers free educational videos. Particular attention is given to mathematics exercises and lessons from Khan used in classrooms for topics such as prime numbers, arithmetic, and calculus. Information is provided on the use of resources from Khan at Summit San Jose, a charter school in California that acted as a pilot program in 2009. Other topics covered include self-paced learning, collaborative learning, and innovations in educational technology.


The article examines the benefits of educational technology as well as the role of technology as an extension of the human brain. The author suggests that in the 21st century, technology has become a method of thinking and mental activity as well as a solution to variability, uncertainty, and complexity. In order to promote educational technology, he discusses the need for curriculum reform that focuses on effective thinking, effective action, and effective relationships rather than individual subjects such as mathematics, English, and science. This curriculum would cover topics such as critical thinking, entrepreneurship, and emotional intelligence.


The article discusses the use of digital technology, digital media, and the Internet by children and teenagers in the 21st century. The author defines the generation of individuals born after 1990 as the iGeneration. The article discusses the amount of time teenagers spend using digital media devices and resources, the average amount of cell phone text messages sent per month by teenagers, and the use of cell phones as portable computers and media devices. The author discusses the responses of teachers and schools to
students’ use of technology and offers several ideas and resources for using digital technology in education.


The article discusses the higher-order thinking skills which the authors believe students ought to be learning in the 21st century. The authors offer nine steps to increase students’ learning outcomes regarding various thinking skills such as critical thinking, student collaboration, and effective communication. Topics include the use of educational technology, the practice of making curriculum contextually relevant to students’ lives, as well as the encouragement of learning transfer in which students can transfer their skills and knowledge to different environments.


In this article, the author discusses assessment methods for evaluating 21st-century skills education and characterizes 21st-century skills as pertaining to the use of information through critical and creative thinking, problem solving and technological literacy. She discusses research regarding changes in work skills and how teaching skills with curriculum content improves learning. She comments on the College Work Readiness Assessment (CWRA), a test in which students must write about solutions to social problems using online information resources, and virtual environment assessment methods.


The article offers suggestions on how U.S. teachers can utilize educational technology in a blended learning approach. These suggestions including setting realistic goals in terms of using web tools, computer programs, and learning management systems, using technology to improve previous teaching methods or resources, and combining aspects of classroom learning and virtual educational media. Other topics covered include online discussion forums, small group work, and students’ access to the Internet.

22. Wells, David. What If ….All the Computers were Broken. Principal 91, no.3 (January/February 2012):12-13.

The article offers the author’s insights on whether schools can still provide a 21st century education despite the absence of technological devices. The author says that according to the Partnership for 21st Century Skills organization, the goal of the 21st century learning is on teaching. The author mentions several non-centered technology approaches
which include building students’ communication skills, engaging in a project-based study of literature, and building students’ global awareness.