

Thinking Outside the Textbook

Prepared by the Florida Association of
Instructional Materials Administrators'
Digital Task Force Committee



Revised June 2012

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How is the State of Florida preparing students to meet the demands of a digitally rich world and technology driven marketplace?

The rapidly evolving digital landscape and the way students of today process and apply information demand that educators approach teaching and learning very differently from the way they were taught. For students, everyday life is already technology-driven as they connect with friends and family via texting, blogging, tweeting, gaming, social networking, photo and video sharing. Yet, many students come to school and learn in traditional classroom environments with teacher directed instruction and students passive recipients of this information. Sometimes, there is a profound gap between the knowledge and skills students learn in school and those needed in today's communities and workplaces.

In order to engage students more meaningfully in their learning and prepare them for the global workforce, the rich diversity of resources available in both print and digital formats must be utilized. Educators must tap into the availability of digital content that enables students to “manipulate it and transfer it into their own meaning, improving upon that meaning, and then sharing it with the world (Abbey, The Digital Classroom).”

We must strive to create an environment that develops autonomous learners, able to critically and creatively think and solve problems, adapt, communicate and collaborate on a global level using the digital tools and resources they already use outside the classroom or those that may not yet exist! While this paradigm shift depends on changing classroom practices, the instructional materials that support this shift must align to changing standards, increased rigor and relevance, and allow students to be “drivers” in their own education.

As our state transitions from traditional to digital, from Next Generation Sunshine State Standards to the Common Core State Standards, educators across the State of Florida recognize their responsibility, and the challenges of transforming learning and teaching environments more in sync with today's students. In October 2009, the Florida Association of District Instructional Materials Administrators (FADIMA) formed a Digital Task Force Committee charged with exploring efforts being made in districts across the State of Florida to “bridge” the gap and examine teaching tools that take advantage of available and emerging technologies to accelerate and increase student learning. Collection and examination of data resulting from pilot studies utilizing mobile devices to deliver digital curriculum will help guide FADIMA's current and future recommendations.

Instructional material, regardless of format, is the one common thread that serves both students and teachers and supports curriculum delivery and accountability, especially with new grading criteria, end of course exams, and the transition to common core state standards. Although we support the transition to digital, we must ensure accessibility and equity of instructional materials so that all students and teachers have the opportunity to be successful.

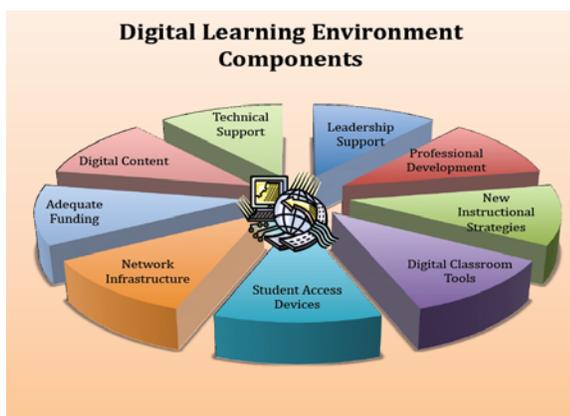
This document serves to outline FADIMA’s core beliefs and reflects pilot data as we move toward fulfilling a vision for providing the appropriate digital instructional materials, tools, and methods for delivering and creating high level educational opportunities that support all learners.

Core beliefs representative of the FADIMA Digital Committee:

- Integration of technology in teaching and learning activities makes curriculum engaging and relevant.
- Technology facilitates differentiated learning to support the individual needs, learning styles and multiple intelligences of students.
- All students and teachers should have equitable access to digital tools, devices, and resources as part of their learning and teaching process.
- Employment of innovative and emerging technologies and digital instructional materials within the teaching/learning process is critical for preparing today’s learners for our global society.
- Technology provides tools allowing students to be creators of information rather than simply consumers.
- No matter how sophisticated the tools that are put in classrooms, the instructional content/curriculum is ***most*** important and must be designed in ways that helps students develop critical thinking, problem solving, and effective communication skills in both core subjects and new, digital content and skills.

FADIMA supports the FCITL position in their paper published January, 2011

“It is the position of the FCITL organization that all Digital Learning Environment components must be implemented and supported simultaneously for a 100% digital learning landscape to be created and maintained. This also requires an agreed upon vision of what the digital learning environment looks like from the perspective of the teacher, student, administrator and parent.”



Digital Learning Environment Components for SUCCESS:

Digital content is only one of the components necessary to transition to a digital learning environment that enables greater student achievement and career success. Most importantly, the ability of ALL students to have access to this digital learning environment, regardless of socio-economic situation, is critical.

Other important components that must be considered are leadership support, effective teaching through professional development, new instructional strategies that incorporate Common Core State Standards, the National Education Technology Standards and 21st century literacy, student access devices, digital classroom tools, network infrastructure and technical support.

Observations from the Field

Consider the following scenario reflecting an iPod Touch Pilot from St. John's County, Florida

A seventh period intensive reading class of high school students from St. John's County with a high number of referrals are less than thrilled to be placed in an Intensive Reading class due to failure in passing the Reading portion of the FCAT.

Students are exposed to a novel "*We Beat the Streets*" by Sharon Draper, Sampson Davis, George Jenkins, and Rameck Hunt. The three male authors are the (characters) doctors who indeed beat the rough streets of inner city Newark, NJ. These reluctant readers first view three video clips of the real three doctors the book was written about on their iPod Touches. This hooks students into the story plot and helps generate questions and conversation relevant to them! Next, students begin "reading" the book complemented with an audio version of the novel via iPods. Students reflect and respond to chapter questions using a free texting application, *Documents*, downloaded on student iPods. This serves as an "exit strategy" for helping students as they make meaning of their text while helping to establish predictions for upcoming chapters. What typically might result in one-sentence responses by students using traditional pencil/paper, suddenly flourishes into thought provoking reflections.

To help promote reading fluency, students use *Voice Memo*, an application that allows students to record themselves using a fluency probe. Using a "thumb tack" microphone students are able to record themselves and then listen back to their recorded passages. Students, not satisfied with their first attempts, continue to practice and refine their oral readings. Students begin to "self compete" as they track their own fluency data using a *Spreadsheet app*. Students begin to take ownership of their learning, increase fluency, and resonate with pride!

To help reach beyond literal comprehension, the teacher utilizes a video game application, *Cranium Core*, and student response devices, or clickers, to engage students in collaborative debate which also serves to reinforce their understanding of the story. Teams challenge each other to defend answers to questions posed. The highlight of the *Cranium Core* end of chapter games includes *Skype* to compete against a team from Palm Beach Gardens High School on the last three chapters of the book.

Assessment is infused throughout the process. More importantly, the students themselves design the assessment questions along the way! Questions are distributed using an eClicker/eInstruction application allowing students the ability to "test drive" peer created questions and respond using their iPod Touches.

Results of this pilot included; increased engagement of students. Communication, collaboration, and competition with each other and against students across the state ignited sense of ownership of learning and strengthened their desire to succeed. A sense of trust and mutual respect was instilled as students used digital tools responsibly and ethically. Finally, increased student achievement as chapter assessment scores increased to 85% on average.

“Formal” Pilots in the State of Florida

Broward and Sarasota County are two districts in Florida that applied to participate in the formal pilot program transitioning to digital instructional materials for the 2011-2012 school year.

Broward

Broward set the following participation criteria and expectations in their district Digital Instructional Materials Pilots; an application process that included criteria requiring schools have administrative leadership/commitment, create a one-to-one learning environment using devices currently district/school owned, and identify teacher(s) to manage a student-directed, teacher facilitated experience within a digital learning environment.

Digital Pilot teachers, and students in grades 5-12, were required to take the Inventory of Teacher Technology Skills (ITTS) and Student Tool for Technology Literacy (ST2L) to collect baseline data on technology competencies at the start of the pilot initiative.

An analysis of program is still in progress to determine impact on student FCAT scores, grades, demographics, etc. A total of nine (9) schools participated in the pilot: four (4) elementary schools, two (2) middle schools, and three (3) high schools.

All teachers/students access their core instructional materials through online digital textbooks, along with other district resources, virtual labs, and web resources via the Broward Enterprise Education Portal (BEEP). Courses include Business Studies, Earth Science, English, Literature, Marine Science, Mathematics, Reading, Social Studies, Sociology, Thinking Skills, and World History.

An array of digital tools are being used including iPod Touch, iPads, laptops, netbooks, Kindles, Nooks, Interactive Whiteboards, student response devices (clickers), etc. These digital devices were acquired through District refresh, Title One, internal school funding, grants, integrated fee based program (i.e. after school funds), or Senior class ‘gift’ to school.

The district plans to document successful practices, collect information regarding successes, opportunities and challenges, determine potential associated costs and/or cost savings, and identify impact on student performance to inform decisions for possible replication of pilots on a larger scale the following year.

Reflections from Broward's Digital Pilot Teachers:

Positive Impacts

- Increased use of project based learning methodology where students research, write, develop, communicate, and present a digital product to demonstrate mastery of concepts learned.
- Students who are starting to bridge what they learn (and ways to learn) from one subject to another.
- Evidence of greater student ownership and responsibility for learning
- Increased opportunity for teacher observation and work with individuals or small groups
- Evidence of increased student engagement, decrease in student behavior issues

Challenges

- Lost instructional time when technology is not working optimally
- Account management issues and loading of content onto digital devices is extremely time-consuming. The digital devices, regardless of kind, are currently managed using a consumer model vs. an educational model.
- Battery power issues interrupt the flow of learning.

Sarasota

The pilot program in Sarasota involved students in grades 6th, 7th, & 8th in science and math courses at their eight middle schools. Students in the pilot could access their science and math textbook through an “app” on their personal device.

Students downloaded the Mobl21 app onto their device and entered their user information to download the appropriate science and math book for their course. The Mobl21 app runs on Android, Mac iOS, and Windows based devices. Once the textbook was downloaded, an internet connection was no longer required to access the instructional content, but other digital content would also not be available.

Sarasota is focusing on being in the “content delivery” business as opposed to being in the “device business”. As the price of devices continues to go down, student access to devices continues to rise. With the ability for students to download other instructional tools to use in class, the device becomes multi-functional. Research from Project Tomorrow's Speak up 2011 National Findings report published in April, 2012, shows 64% of parents report that they would purchase a mobile device for their child's academic use at school.

Reflections on Sarasota's Pilot:

- Sarasota students have experienced minimal difficulties working with the content within the app on their device. They have suggested a number of ideas that would make the textbook content more meaningful to their understanding and learning. These ideas are realistic as the technology continues to evolve and publishers allow the access to evolve with the technology. Standardization across the format for delivery from the publishers is an area that needs to be addressed moving forward.
- Professional Development in lesson design and implementation for teachers also needs to be considered moving forward. Differences in lesson delivery exist when moving to an “all digital” environment.
- Important to note is the fact that too often educators beginning to infuse technology into the instructional process to try and fit the curriculum into technology. For the pilot project/scenario described above, the goal was not to replace strong traditional teaching methodology but, rather, personalize learning and inspire students in more dynamic, relevant and meaningful ways.
- Capitalizing on digital tools and resources can facilitate the students' ability to engage with the text, reflect, collaborate and network with students within and outside their classroom. Consequently, the dynamics of the classroom environment is transformed as increasingly motivated students begin to take more control of the *what*, *why*, and *how*'s of their own learning.

The e-Book

How will these new teaching and learning strategies that reflect needed instructional changes influence the way digital content is produced and delivered? Let's begin with the concept of the electronic textbook or e-Book.

In its infancy, an e-Book was the simple electronic counterpart to the printed textbook that required a portable device such as an e-book reader, computer/ laptop, or PDA for viewing. Early on, some publishers began providing a CD-ROM, e-Book version of their textbooks with enhanced interactive features. Gradually as both mobile technologies advanced and consumer demand rose for easy access to digital content, e-Books have evolved into a more complex format.

The term e-Book now represents multi-faceted digital content that can be delivered in a variety of electronic formats with varying intellectual property rights. For example, digital content formats for e-Books can vary from a simple PDF file that is identical to the printed text with no user interactivity, to a PDF with limited interactivity, to a fully interactive online e-Book that includes collaborative learning features such as file sharing. There are still varying standards for e-Books and, consequently, the device used is contingent upon the delivery format.

Clearwater High School replaced much of their print textbooks with PDF content on *Kindles* for 2,100 students during the fall of 2010. While districts such as Pinellas County may be piloting e-readers as a digital textbook solution, FADIMA's Digital Committee does not recommend the use of e-reader devices as the solution to deliver instructional materials. While they may provide benefits, the use of one dimensional e-reader devices does not support all the desired teaching/learning skills and the growing trend toward online learning, more personalized instruction, and collaboration on a global scale. Instead multi-dimensional e-reader and other devices selected for student use should support the learners' ability to read and interact with content, research, publish and communicate information as part of a comprehensive digital learning experience.

A majority of Florida districts currently employ a blended model whereby the adoption of instructional materials includes both print and its digital parallel – the eBook, along with its accompanying digital ancillary supporting materials. **We define “digital” as materials or resources that invite inquiry, interaction and manipulation versus an electronic PDF that is simply a translation of the “flat” printed book.**

The viability of portable e-readers or other mobile devices such as iPod Touches, smart phones, iPads, and “netbooks” should be considered as a potential way to deliver instructional material content electronically.

Pilot programs that allow students to bring their own computing devices to class, as a means to develop a technology-enhanced education, may be the inevitable solution for some districts given ever-constricting budgets. These include not only student-owned, but any web-enabled device, including tablets, iPods, iPads, and cell phones. “While many may believe this might invite such potential chaos into the classroom, it only seems sensible, or as Don Manderson, technology coordinator of Florida's Escambia County Schools, says simply, ‘just the right thing to do’.” (*Weinstock, THE Journal*)

It should be noted that the United States Department of Education and Department of Justice have cautioned both post secondary and K-12 institutions that e-readers used in the classroom must comply with accessibility laws. “Requiring use of an emerging technology in a classroom environment when that technology is inaccessible to an entire population of individuals with disabilities (individuals with visual disabilities) may constitute discrimination prohibited by the Americans with Disabilities Act of 1990 (ADA) and Section 504 of the Rehabilitation Act of 1973 (Section 504).” http://www.disability.gov/civil_rights/laws_&_regulations/education

Many districts now use digital instructional materials regularly. They are transitioning from the traditional print textbook and teacher directed classroom into a blended learning environment that includes the integration of a web-based learning and content management system or portal solution to allow users the ability to:

- Access student performance data.
- Manage a standards-based, consistent curriculum aligning lesson plans, content, and assessment to district, state or national standards.
- Align instructional resources to a standards based curricula providing teachers with the ability to manage their instructional plans and delivery effectively.
- Provide a single point of entry for all teaching and learning resources helping districts organize and align third party digital resources to standards and other district materials, including textbook resources and ancillary materials.
- Build a professional learning community allowing teachers (and students) to easily share learning experiences, best practices, lesson plans and engage in open discussions around educational issues.

While there are many compelling reasons that reflect an inevitable move toward digital curriculum and online learning, many challenges must also be addressed. These include:

Considerations:

- The need to create equity of accessibility to ensure all educational stakeholders can utilize digital curriculum within a safe and secure environment.
- The refresh rate to keep devices and content current. The need to vet content, especially the many free, online, and open source applications available, to ensure quality of curriculum aligned to state/national standards.
- Professional development is the key to successfully accessing and utilizing current and emerging technologies within the instructional process.
- Maintenance of devices and services with reduction of staff at the school, district and state levels due to budget constraints continues to be increasingly challenging.
- Costs of intellectual property and development drives instructional content pricing
- Increased time when technology is not working optimally, but well worth the effort when it does
- Account management issues and loading of content onto digital devices are extremely time-consuming. Digital devices, regardless of type, are currently managed using a consumer model vs. an educational model. Currently, content acquisition for devices such as tablets, iPads, etc., is designed on an individual consumer basis, where each user purchases and downloads content under his or her personal account. When this model is moved into a school or other enterprise where the requirements are to provide the content to the student, this model is cumbersome. In comparison, the typical network based enterprise model allows access to the member devices and through administrative rights the content and maintenance activities can be performed independent of user action and often transparent allowing continued use.

- Digital devices are less resilient to damage as are their paper counterparts. While a damaged textbook may still be readable with worn corners and torn pages, cracked screens and other issues that are common place, may make the device unusable long before it is obsolete.
- Current battery run times may not be long enough to meet the requirements of an entire school day and while additional electrical could be designed into the planning of new schools, existing campuses are unlikely to have electrical to allow devices to be connected while in class.
- The allowance for Bring your own Technology may not reduce the school's obligations under the Children's Internet Protection Act and the Family Educational Rights and Privacy Act. Additionally the school must create and manage more sophisticated security systems to protect the school's networks as audited by the State Auditor General's Office than would be required only with equipment managed directly through the school technology systems.

Recommendations:

- Continue ongoing collection and examination of data resulting from pilot studies utilizing mobile devices to deliver digital curriculum including its impact on student achievement
- Reverse the process of traditionally buying print and receiving digital to buying more digital and receiving print, as needed.
- Require publishers to submit electronic files based on NIMAS standards (standards established by the Secretary of Education to be used in the preparation of electronic files suitable and used for efficient conversion into specialized formats).
- Produce web based course content that is SCORM (Sharable Content Object Reference Model) compliant. SCORM governs how online learning content and Learning Management Systems (LMSs) communicate with each other.
- Propose the DOE continue with state adoption process, lengthening the adoption period and requiring in contracts that publishers update online instructional materials annually (minimally).
- Extend district pilots that study implementation of digital content to provide a standardized framework to document and evaluate data.
- Continue the digital learning environment advisory council, comprised of key leaders from the state, to gain overall stakeholder input and make recommendations that will invite increased district participation in the state's digital pilot.
- **Reinstate a separate categorical fund to be used to purchase the hardware needed to support a one-to-one environment for teaching/learning.**

The FADIMA Digital Committee believes that Florida needs to move toward digital content but there is also a need to consider access, quality, the pedagogy of teaching and the experience of the student or digital learning will produce no better results than past educational reforms. It is critical to focus on digital content as a collaborative process that focuses on the needs of the students, the changing role of teachers, and maximize the use of digital content and devices within the instructional process. Only then will education fulfill the mission of serving our students to become engaged learners and successful, global citizens who can think, lead, and apply knowledge to new and ever-changing situations.

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