

# Educational Technology Roadmap

Technology Integration Committee  
Recommendations  
March 2014

## Agenda

- Committee Background
  - ◆ History
  - ◆ Goals and Objectives
  - ◆ Approach, Process and Committee Profile
- Recommendations
  - ◆ Overview
  - ◆ Review of Each Recommendation
- Discussion & Feedback
- Next Steps

## Background

- Last year's effort
- Expectations

This plan is the next step, understanding the past, present and future needs in an evolving landscape



## Goals & Objectives

The goal of the Technology Integration Committee is to develop recommendations for continued technology integration in our district

The committee focused on the following areas of research:

- Current UCFSD technology use
- UCFSD technology innovations
- Tools (devices) for tech integration
- Learning Management Systems
- Current state of tech integration for classrooms/teachers
- Direction of eBooks and eTextbooks
- Digital Citizenship instruction
- Professional Development needs

The committee's process was inclusive and thorough, reaching out to all stakeholders and experts:

- Diverse committee of employees across the district
- Subcommittees focused on specific aspects of strategy
- Surveys and focus groups
- Literature reviews
- Site visits
- Interviews and classroom observations of best practices
- Consult with variety of experts (educators, vendors & publishers)

## Committee Profile

- 25 committee members, plus input from subject matter experts.
- Diverse group including members from all levels including; teachers, support staff and administrators.
- Representatives from each school with a variety of positions.
- Varied backgrounds including; technology teachers and support staff along with classroom teachers and subject area specialists.

## Committee Members

Mike Barrett Learning Support Teacher (UES)  
Ken Batchelor Assistant to the Superintendent (Admin)  
Josh Boughner Network Engineer (Admin)  
Jodi Byrne English Teacher (UHS)  
Dave Carter Technology Teacher (PES)  
Jim Conley Assistant Principal (UHS)  
Lisa Dorazio Database Administrator (Admin)  
Scott Duggan Technology Teacher (UES)  
Kimberly Ely English Teacher (UHS)  
Jessica Gallagher Fourth Grade Teacher (PES)  
Julie Hawkes Spanish Teacher (UHS)  
Tim Hoffman Principal (CFPMS)  
Diana Keller Technology Support (PES)  
Michael Lapp Second Grade Teacher (CFES)  
Dave Listman Curriculum Integrator (Admin)  
Robin Martin Technology Teacher (CFPMS)  
Diane Mustin Librarian (UHS)  
Bath Nanis Learning Support Teacher (CFPMS)  
John Nolen Dir of Curriculum and Instruction (Admin)  
Todd Picard Fourth Grade Teacher (HES)  
Mark Ransford Principal (CFES)  
Leah Reider Supervisor of Special Education (Admin)  
John Sanville Superintendent (Admin)  
Jean Stevens Computer Applications Teacher (UHS)  
John Walsh Technology Teacher (CFPMS)

## Eight Recommendations (not in priority order)

<b>Learning Management System</b>	Pilot use of a Learning Management System (LMS) & BYOD
<b>Portable Devices</b>	More access to portable devices for students and teachers
<b>Website</b>	Teachers implement a Website for student/parent access
<b>Digital Citizenship</b>	Instruct, reinforce and model Digital Citizenship in our curriculum and instruction
<b>eContent</b>	Continue to develop ebook collections in secondary libraries. Also continue to purchase digital content when purchasing curriculum
<b>Student Help Team</b>	Investigate a student technology help team
<b>Technical Infrastructure</b>	Infrastructure capacity and support improvements: The supporting infrastructure must be in place to prior to roll out of key initiatives
<b>Professional Development</b>	Professional Development: All technology implementation must include a robust professional development plan which should include collaboration time among teachers

*“Blended learning is not just buying a tablet for every student. It’s about using technology as a delivery system to create a shift in the instructional model that gives students more controls and flexibility, and allows for that instructional change toward personalization to take place.” ” Susan Patrick, president and CEO of iNACOL.*

## 1 LMS Rationale

- A Learning Management System (LMS) will allow teachers to organize their lessons and resources in a digital format. Students then will be able to access specific course content 24/7, and they will have access to support materials such as tutorials. Teachers will be able to include quizzes and assessments on the LMS to allow for quick feedback to students. As teachers connect lessons with a variety of educational resources, these resources can be used during the regular class time as well. Students can interact with the teacher and each other through an LMS as directed by the teacher.
- This will provide for a more robust Bring Your Own Device (BYOD) environment

## 1 **Bring Your Own Device (BYOD)**

- BYOD means students bring their own devices to school for educational purposes.
- Excellent teachers, providing the right instruction, combined with a dynamic curriculum and resources available on-line, create a learning environment where great things can happen!
- Introduction of BYOD as a day to day instructional tool will be gradual and evaluated based on pilot
- In a BYOD environment District will have devices available during the school day for students who do not have their own device



## 1 Bring Your Own Device (BYOD)

### Pro BYOD

- Learning anytime, anywhere
- Personalized devices
- Devices are commonly more up-to-date
- Cost-effective
- Allows for immediate application in the classroom
- Competitive pricing of tablets, smartphones, and laptop computers
- Replicates a technology-rich environment already common in higher education and business
- Flexibility- support different learners with different needs

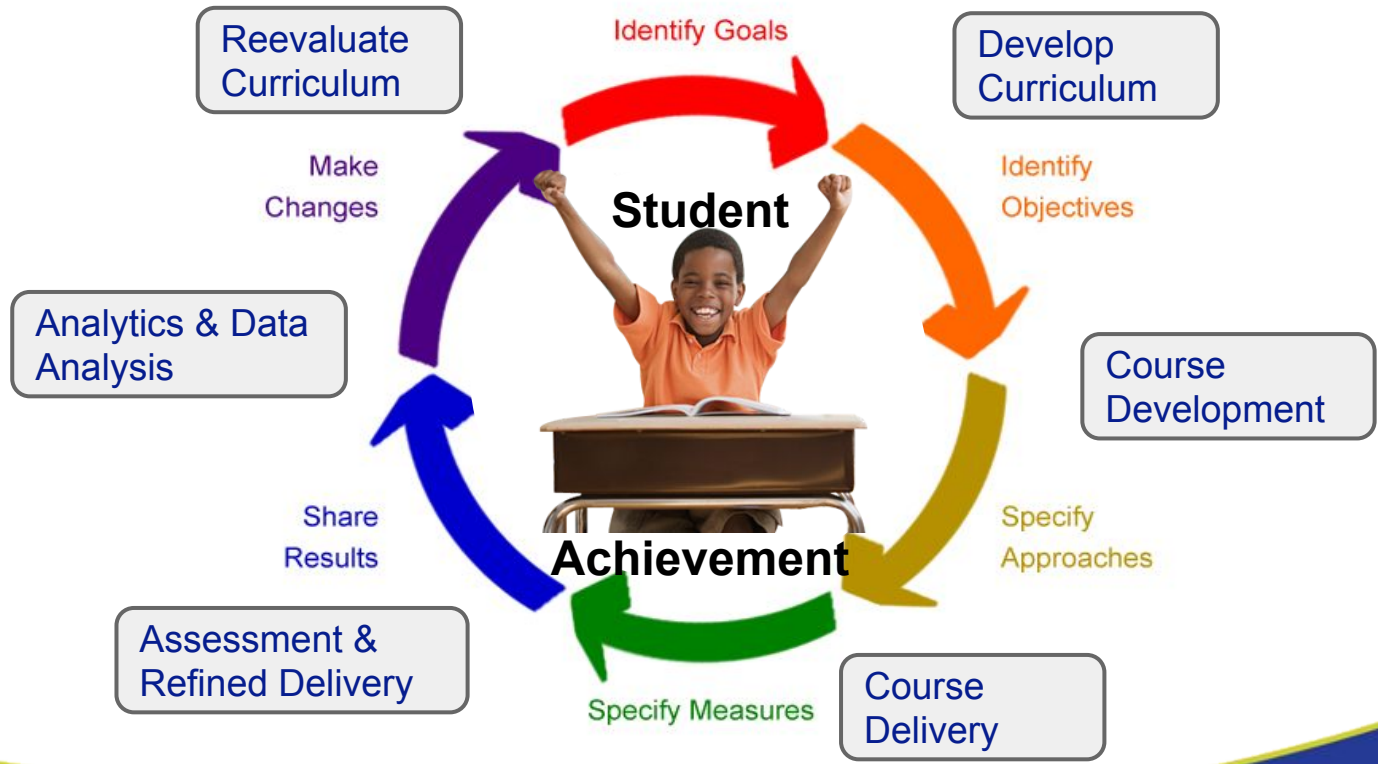
### Con BYOD

- Lack of uniformity of devices
- Need to control network access
- Requires a robust network infrastructure
- Requires a large bandwidth
- Limitations of some mobile devices

**Committee Finding:** *The LMS opens up "continuous feedback loops" for all participants of our educational community - accountability and transparency for **parents, administration, teachers**, etc.*

# 1 LMS Rationale Continued...

## Learning Management Systems Drive Student Achievement Integrated System - Continuous Feedback Loop



**Recommendation Overview**

- Pilot the use of an LMS/BYOD; 8 HS, 8 MS, 4 ES
- Design pilot for a complete review in Feb 2015
- Make recommendations for next phase at that time
- Pilot members trainers for next phase

**1 LMS Timeline**



**Spring 2015**

- **Based on results...**
- Expand to a full grade/department or school (exclude elementary)
- Select Teachers
- Provide PD
- Develop curriculum
- Build tech capacity

**Spring/Summer 2016**

- Provide PD
- Develop curriculum
- Build tech capacity

**Fall 2015**

- Expanded implementation

**June 2014**

- Select LMS

**Fall 2014**

- Conduct Pilot

**Year 1: Pilot ...and evaluate**

**Year 2: Expand...and evaluate**

**Year 3 & 4: Roll Out**

**Summer 2014**

- Select 20 teachers
- Provide PD
- Develop curriculum
- Technical installation
- Create evaluation criteria

**Feb 2015**

- Evaluate Pilot



**Summer 2015**

- Provide PD
- Develop curriculum
- Build tech capacity

**Winter 2016**

- Evaluate/adjust implementation

**2016/2017**

- Continuous improvement
- Develop curriculum
- Provide PD
- Build tech capacity

# 1 LMS Budget

	2014-2015	2015-2016 (Depends on pilot recommendation)	2016-2017 (Depends on pilot recommendation)	2017-2018 (Possible full implementation)
6th-8th Grade	8 Teachers	Expand implementation	Expand implementation	Full Implementation
9th-12th Grade	8 Teachers	Expand implementation	Expand implementation	Full Implementation
K-5th	4 Teachers	Expand implementation	Expand implementation	Full Implementation
Costs	License: (600-HS, 600- ms, 100-ES)	License: (800-HS, 800-MS, 200-ES)	License: (1,000-HS, 1,000-MS, 400-ES)	License: (4200-current enrollment)

## 2 Portable Devices Rationale

Our students need to continue to have access to portable devices to increase their ability to create content, collaborate, make presentations, communicate with their teachers, and to engage in research. Teachers need increased access to portable devices to be able to update and create content, and to organize resources in a variety of locations and times.



**Committee Finding:** *The mobile device landscape is rapidly evolving, there are many platforms available. Getting locked into one device as opposed to using the best device for a task should be avoided.*

## 2 Portable Devices Rationale

Options: One to One with iPads or Chromebooks versus BYOD  
Decision: Devices based on need in the Classroom with BYOD

### Committee Feedback: Chromebooks

*The Chromebooks may serve as a low-cost alternative to traditional Mac or Windows laptops when only a web browser is needed. With the district's commitment to Google Apps, they make sense for students needing easy access to their accounts but also serve as a great tool when simply a web browser is needed. They have been well-received at the MS by both students and staff. We currently have three carts of Chromebooks that have been continually in use since the fall. It does remain to be seen, however, how long they will serve with regards to both wear and tear as well as tech specs. We think chromebook usage should be expanded.*

### Committee Feedback: iPads

*The iPad may be the most difficult device to categorize in terms of recommendations. While it currently serves as the best option for a tablet device (most popular consumer tablet, the app ecosystem, mature, proven device, education-friendly) it's implementation is most closely tied to how it is deployed., iPads have proved successful when used with specific apps. The iPad serves best as a **single-user, personal device** and provides many challenges when used as a "shared" device in the classroom or on a cart.*

## 2 **Portable Devices Timeline & Budget**

We will look to continue to support the integration of technology and portable devices through the budget process



**Committee Finding based on parent and student focus groups and surveys indicate -**  
*Expectation that Teachers should have websites....and use them consistently Websites could make assignments more streamline*

### 3 Website Rationale

- Students and parents expect to be able to access important information regarding their educational program through the teacher website. With the improvement in technology tools it is now reasonable to assume that all teachers would have a website with relevant information for students and parents. This will promote communication, engagement and school-home partnerships.
  
- The website should include:
  - ◆ syllabus
  - ◆ contact information (welcome page)
  - ◆ classroom logistics (rules)
  - ◆ homework policy
  - ◆ calendar of assignments





### 3 Website Timeline & Budget

- Year 1 - 6th-12th grade: All teachers implement Websites through google or a LMS by the start of the second semester.
- Year 2 - add K-5th grade

...See # 8 for professional development budget

**Committee Finding:** *This is a critical part of our mission, student safety, and we need to continue to improve our instruction in this area.*

## 4 Digital Citizenship Rationale

- Instruct, reinforce and model Digital Citizenship in our curriculum and instruction
- Our students need to be continually instructed on the safe and ethical uses of technology tools in their educational and social lives. As technology becomes more prevalent in their lives we need to partner with parents in preparing them for the safe and effective use of technology.



## 4 Digital Citizenship Timeline

### Year 1

Need training for all staff  
Will develop an online training course for staff using LMS  
Outreach and training for parents  
Embed in instruction at all levels  
Fits with Olweus lessons in Elem. and Middle school

Training will occur on in-service days and be facilitated by our staff. There will be minimal costs associated with this recommendation.

### Year 2

As curriculum is written specific digital citizenship instruction should be considered and included.

Continue parent outreach

Training will occur on in-service days and be facilitated by our staff. There will be minimal costs associated with this recommendation.

### Year 3 & 4

As curriculum is written specific digital citizenship instruction should be considered and included.

Continue parent outreach

Training will occur on in-service days and be facilitated by our staff. There will be minimal costs associated with this recommendation.

**Committee Finding:** *eBbook usage in libraries continues to grow. The challenge is to expand ebooks while maintaining print collections. With unique advantages to both print and ebook access to information, students are “ambitextrous,” comfortable and open to reading in both formats.*

## 5 eContent Rationale

ACE-ing eBooks: eBooks and Print together, expanding reading opportunities

- Access: eBooks can be accessed 24/7 from school or home by multiple users at the same time.
- Content: Fiction, nonfiction and reference titles can be viewed on various devices (eg. ereader, computer, tablet, phone). Content can be searched full text.
- Enhancement: Enriched and interactive information resources (eg. dictionary, audio, video, note taking and highlighting features).

\* As the eTextbook market expands and we transition to BYOD, the purchase of electronic textbooks may provide a cost effective and valuable alternative to selected print textbooks.



## 5 eContent Timeline & Budget

Year 1
Purchase additional ebooks for libraries based on librarian recommendations
Implement digital resources with new ELA adoption in Elementary
No additional cost outside of regular curriculum cycle

Year 2
Purchase additional ebooks for libraries based on librarian recommendations as their budgets allow
Implement digital resources with new curricular adoptions
No additional cost outside of regular curriculum cycle

Year 3 & 4
Purchase additional ebooks for libraries based on librarian recommendations as their budgets allow
Implement digital resources with new curricular adoptions
No additional cost outside of regular curriculum cycle

**Committee Finding:** *Schools with successful implementations have some kind of student to student help network*

## 6 Student Help Team Rationale

- Investigate a student technology help team
- This is a great way to mentor students and to give students a real life application to what they are learning. Also, students can provide real help to other students as we implement more on-line learning opportunities as well looking at continued BYOD in secondary

## 6 Student Help Team Timeline & Budget

### Year 1

Investigate a student technology help team

There will be minimal costs associated with this recommendation

### Year 2

If seems feasible then-Pilot a student technology help team

There will be minimal costs associated with this recommendation

### Year 3 & 4

If pilot goes well then-Continue to implement

There will be minimal costs associated with this recommendation

## 7 Technical Infrastructure Rationale

- The rapidly increasing number of wireless devices will continue to require investments into network infrastructure.
- Growing use of streaming video and audio will put strain on building internet connectivity potentially requiring more substantial internet connections. A LMS will add to this need.
- BYOD/Personal device use has been growing rapidly to a point where ~40% of all wireless devices at the High School are on the Guest network.
- Depending on the scope and use case of any LMS implementation the requirements to support it from an infrastructure perspective could change. A pilot of the LMS in year one will be imperative to get a good gauge for what network resources need to be added or adjusted to ensure a successful implementation.





## 7 Technical Infrastructure Timeline

### Year 1

Remaining schools should have Gigabit PoE switches installed

Setup additional bandwidth monitoring tools

IF LMS is being Piloted - Test bandwidth/network requirements of LMS Pilot. Setup QoS to help ensure more reliable service of LMS

Investigate Internet connection options at elementaries

### Year 2

Increase bandwidth at MS and HS.

Install additional switches to support new Access Points at MS and HS

Move towards 1 Access Point in every classroom at MS and HS

### Year 3 & 4

Increase bandwidth at elementaries

Install additional switches to support new Access Points at elementary schools

Install new wireless controllers at elementaries to support additional Access Points

Move towards 1 Access Point in every classroom at elementaries

Moving to a LMS will increase the importance of reliable and fast network/internet connectivity.

## 7 Technical Infrastructure Budget

### Year 1

Switches - \$76,000(one time)

### Year 2 - HS/MS

Switches - \$20,000(one time)

**Bandwidth - \$10,000(recurring)**

**Licensing - \$3,000(recurring)**

**Access Points - \$69,000(one time)**

**\*Budget items listed in blue text are currently planned upgrades.**

**\*Budget items listed in green text are potential upgrades due to a LMS implementation coupled with encouraged BYOD expansion.**

### Year 3 - Elementaries

Switches - \$16,000(one time)

**Bandwidth - \$54,000(recurring)**

**Licensing - \$5,000(recurring)**

**Controllers - \$15,000(one time)**

**Access Points - \$61,800(one time)**

A pilot will be imperative to determine the amount of bandwidth necessary at the elementaries

## 8 PD Rationale

All technology implementation must include a robust professional development plan which should include collaboration time. Overall, 80% of all teachers that responded to the survey feel that PD using technology should be ongoing and more consistent

### Strategies for a Comprehensive Program

- Initial LMS PD for teachers prior to the implementation of the LMS
- Initial training on BYOD prior to implementation
- Train the trainer program - designate mentors school/grade
- Provide more time for collaboration
- Provide time for curriculum development
- Flex training time over the summer
- PD for tech support staff
- Develop Online PD Courses

### Learning Priorities

- 21st Century Learning Skills
- Learning Management System
- Classroom web pages
- Portable devices in the classroom
- Spreadsheets, word processing and presentations
- Ongoing PD on Google
- Ongoing PD on smartboards
- Classroom Response Devices/Apps
- Collaboration tools
- Video Resources
- Digital Citizenship online courses



## 8 PD Timeline

Year 1
LMS/BYOD PD for teachers in pilot
Elementary PD tied to implementation of new ELA curriculum.
Develop of Web Pages
Smartboard and Google
Word processing, spreadsheet and presentation software
Classroom Response Devices/Apps
Collaboration tools
Streaming videos
\$5,000 beyond LMS budget

Year 2
Continue with PD on LMS/BYOD implementation
Train specific teachers on implementation of BYOD
Specific PD will be focused on identified areas using teacher surveys
Ongoing PD on Google
Ongoing PD on smartboards
Ongoing Online PD -Response devices, Videos, Collaboration
Parent University - LMS
\$5,000 beyond LMS budget

Year 3 & 4
Continue with PD on LMS/BYOD implementation
Train teachers on implementation of BYOD
Specific PD will be focused on identified areas using teacher surveys
Ongoing PD on Google
Ongoing PD on smartboards
Ongoing Online PD -Response devices, Videos, Collaboration
Parent University - LMS
\$5,000 beyond LMS budget

## Evaluation of Incremental Costs

	2014-15	2015-16	2016-17	2017-18	Recurring Costs
<b>LMS</b>	<b>Pilot</b>	<b>Expand Pilot</b>	<b>Implement</b>	<b>Stabilize</b>	
Setup fees	\$2,000	\$0	\$0	\$0	\$0
License fees	\$5,000	\$10,000	\$21,000	\$21,000	\$21,000
Curriculum writing	\$10,000	\$15,000	\$15,000	\$0	\$0
<b>Portable Devices (*)</b>	\$0	\$0	\$0	\$0	\$0
<b>Websites (*)</b>	\$0	\$0	\$0	\$0	\$0
<b>Digital Citizenship (*)</b>	\$2,000	\$0	\$0	\$0	\$0
<b>eContent (*)</b>	\$0	\$0	\$0	\$0	\$0
<b>Student Help Team (*)</b>	\$0	\$0	\$0	\$0	\$0
<b>Technical Infrastructure</b>					
Bandwidth	\$0	\$10,000	\$64,000	\$64,000	\$64,000
Licensing	\$0	\$3,000	\$8,000	\$8,000	\$8,000
Access Points (non-recurring)	\$0	\$69,000	\$62,000	\$0	\$0
<b>Professional Development</b>					
Initial training	\$16,000	\$8,000	\$8,000	\$8,000	\$0
Ongoing skills development (*)	\$0	\$0	\$0	\$0	\$0
<b>Total</b>	<b>\$35,000</b>	<b>\$115,000</b>	<b>\$178,000</b>	<b>\$101,000</b>	<b>\$93,000</b>

(\*) No additional cost outside of regular curriculum cycle