Executive Summary

Creating a Culture of 21st Century Learning

Five Year Roadmap

Meeks Educational Technologies

BACKGROUND

The leadership of Westerville City School District (WCSD) expected the participants of the WCSD Strategic Planning initiative and related feedback from the community to identify *Technology* and *Student Access to Technology* as key areas of interest among the constituents of the District. The Strategic Planning process occurred from November 2013 through January 2014. It involved the participation of approximately 180 constituents and also garnered electronic feedback from 248 individuals.

In anticipation of that event, school officials engaged Meeks Educational Technologies (MET) to facilitate a separate planning initiative, internal to the District, focusing on 21st Century Learning and Teaching. It is vital to understand that the District's vision and mission for 21st Century Learning and Teaching provides the context and driving concepts of the types and quantity of technology required to accomplish student learning. We wish to avoid purchasing technology for the sake of technology; rather technology should be purchased which supports the District goals, mission and planning for how WCSD students will learn. The MET planning process is called "*Creating a Culture of 21st Century Learning*" resulting in a document which contains a five year *Learning and Teaching Roadmap* which aligns with the timeline of the WCSD Strategic Planning process and current financial planning.

STRATEGIC PLAN ALIGNMENT

Approximately 180 stakeholders, including district staff, community members, students and business professionals, collaborated during the 2013-14 school year on the development of WCSD's new Strategic Plan, which is themed "Creating the 21st Century Student." Many technology themes emerged during this process and the Learning & Teaching Roadmap guides our efforts to meets the expectations of our community. Key themes from the Strategic Plan include:

- **Teaching practices** need to be student centered, flexible, and reflect 21st Century skills including technology as a learning tool.

- Instructional staff should use researched-based, student centered, **instructional practices** that promote the development of 21st Century skills.

- **Technology** has become an essential tool for learning and the district needs to identify strategies and work with families to reduce barriers to access.

- The school district's infrastructure must **support technology** as an essential teaching and learning tool and provide access to technology for all students on a consistent basis.

- **Access to technology** is essential and has had a significant impact on the way we learn and communicate with each other. The district must work to improve access to technology and the use of technology in its engagement efforts.

MET PHILOSPHICAL APPROACH

All K-12 School Districts in the United States are in engaged to some degree in planning for 21st Century Learning as driven by the new curriculums. Within each district there are multiple conversations and meetings regarding how to change to 21st Century Learning, with some districts moving forward with initiatives addressing policy and process changes.

The MET *Creating a Culture of 21st Century Learning* planning process is designed to capture all existing discussions and initiatives, broaden the scope of the discussions to include areas larger than individual departments and bring everything into a systemic and coherent approach. It also brings a number of modern organizational management methodologies into the process.

MET suggests there are seven silos of interest with multiple issues within each silo which must be considered during the planning process. The exclusion of any one of the seven silos may derail the process but you are virtually guaranteed the initiative (a change to a Culture of 21st Century Learning) will fail if two or more of the silos are not addressed.
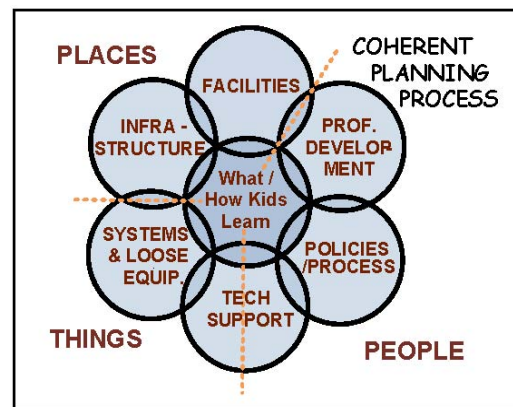
We also suggest that you must make a complex plan simple and coherent so your participants can execute the plan. You make a complex plan simple is to use by defining "One Over-Riding Concept" against which all other issues are measured. Within this planning process the primary concept needs to be: "What and How Kids Learn"

The planning participants believe that it was very important to share the following Mission for 21st Century Learning and Teaching for Westerville City School District developed through this planning process.

> *Westerville City Schools and its partners provide a 21st Century education that aligns standards, assessments, curriculum, instruction, professional development and learning environments to support student success. Students are empowered through innovative, relevant and rigorous experiences to prepare them for career readiness in a dynamic global economy.*

In an attempt to make this vision a universal concept, the planning participants agreed that every teacher should ask themselves the following simple set of questions regarding every student activity they plan. This should be a rubric, which everyone is familiar with and adheres to:

Is My Planned Student Experience:
L - Learner-centered
E - Engaging
A - Aligned to Resources
R - Rigorous and Relevant
N - Nurturing and Caring Environment

Learner-centered: To what degree is my classroom centered on the needs of the individual learner?
Engaging: To what degree do I engage my students in an active learning experience?
Aligned to Resources: To what degree have I aligned the available resources to the needs of my students?
Rigorous and Relevant: To what degree have I created a rigorous, challenging, and relevant experience for my students?
Nurturing and Caring Environment: To what degree have I created an environment in which students feel safe, respected, and cared for?

If the teachers of WCSD ask themselves these questions regarding each of their planned student experience, the District will be quite successful in moving its teachers from a Teacher-Centered Learning Environment to a Student-Centered Learning Environment and a corresponding increase in student academic achievement will follow.

WHERE ARE YOU NOW?

The first step of the planning process was an assessment by the consultant of how WCSD compares to other K-12 school districts in the United States within seven specific silos of interest:

- What/How Students Learn
  - The District does not have a clear understanding of what a Culture of 21st Century Learning means to their student learning experience. *Average*
  - Most digital learning occurs in labs at the MS and HS levels and a combination of individualized and computer lab learning at the ES grade levels. *Lower than average*
- Professional Development
  - Without a clear understanding of a Culture of 21st Century Learning as noted above, WCSD"s Professional Development is equally lacking a clear focus. *Average*

- District Policies and Processes
  - Separation between instruction and technology, lack of formal communication channels, lack of a software/hardware adoption process tied to content material adoption and lack of instructional quality control processes. _Lower Than Average_
- Technical Support
  - Separation between Instructional Support and Technical Support. _Lower Than Average_
  - Number of instructional and technical support personnel. _Average_
  - Lack of a recognized IT Management process, including Service Desk. _Average_
- Facilities
  - WCSD does not have facilities designed to maximize 21st Century Learning. _Average_
  - WCSD has flexible furniture primarily in Elementary grade levels but not in Middle or High grade levels. _Average_
- Infrastructure
  - The fact that there are no immediately recognizable issues. _Above Average_
- Systems and Loose Components
  - Student Computing Devices – Desktops computers. _Below Average_
  - Teacher Computing Devices – Desktop computers. _Below Average_
  - Data Network and Cabling – Recently completed implementation of a high-density wireless network and major upgrade of WAN. _Above Average_
  - Voice Communications – Has complete digital VoIP solution. _Above Average_
  - Instructional Technologies – Limited focus on instructional technologies for classroom support. _Below Average_

WHERE DO YOU WANT TO GO?

The first Planning lab, and second step in the planning process, established common language and provided the lab participants with a series of Best Practices. The Best Practices have been observed and gathered by MET from a number of school district along with 21st Century change and quality management processes. Key concepts within each of the seven silos of interest include:
- What/How Students Learn – Aligning the organization, equity of access (some of the students some of the time or all of the students all of the time), data driven student learning (alignment to curriculum, student readiness, student experience with formative assessment, and instructional analysis/differentiation), digital environment and student technology literacy.
- Professional Development - Multi-strand professional development, scope and sequence of 21st Century learning competencies and technology literacy, accountability, incentives and learning management systems.
- District Policies and Processes – Ideal organizational structure supporting 21st Century learning and teaching, formal communications channels and roles, hardware and software adoption process, accountability and quality management.

- Technical Support – Merging instructional technology support and systems technical support, ratios of support personnel, IT management (ITIL), merged service desk, server virtualization and automated processes.
- Facilities - Instructional space designs which support 21st learning activities, flexible furnishings and furniture, spatial relationships, technical space requirements and afterhour access.
- Infrastructure – AC Power, HVAC (heating, ventilation and air conditioning) requirements, cable pathways, instructional space lighting systems and ambient light.
- Systems and Loose Components – Student computing devices, teacher computing devices, data networks (wired, wireless, WAN - wide area network and Internet access), instructional support technologies (projectors, audio systems, etc…) and security systems.

HOW WILL YOU GET THERE?

The second Planning Lab, and third step in the planning process, developed the Mission Statement for Learning and Teacher Rubric. The participants also articulated issues they considered as hindrances and obstacles to this plan moving forward. Additionally, they developed goals, strategies, and activities which enable the district to address and overcome those hindrances and obstacles.

The issues were prioritized within the context of the level of impact they would have on the success of this plan. High Impact issues must be addressed or this plan should be expected to fail. Medium impact issues will have a large impact on the effectiveness, efficiency and sustainability of this plan. Low impact issues are ones which are important but have little impact on the ability of this plan to move forward. The issues are included on the following pages.

CHALLENGES AND STRATEGIES TO GETTING THERE

School Challenges represent factors, hindrances and obstacles which, in the opinion of the planning lab participants, require action to assure a successful and efficient implementation of a *Culture of 21st Century Learning* in WCSD. These issues were prioritized into three primary categories by the Planning Lab participants.

HIGH IMPACT

The first category represents **_HIGH LEVEL IMPACT ISSUES_** related to the acceptance and implementation of this Teaching and Learning Roadmap. It is the opinion of the Planning Lab participants that the plan will be severely limited in its impact on creating a *Culture of 21st Century Learning* in WCSD if these issues are not addressed and resolved. They are comprised of the following issues:

- Sharing the Roadmap
- Keeper of the Plan
- Information Technology Upgrade
- Equity of Access
- Professional Development Realignment/Reorientation
- Job Embedded Professional Development/Learning and Teaching Coaches

Sharing the Roadmap
The WCSD community needs to be educated regarding the Learning and Teaching Roadmap and its impact on the district. This would include existing faculty, all grade levels and content areas; the Board of Education, and the community.

Goals:

- The 21st Century Learning Committee (members have a thorough understanding of the plan before the strategies are implemented).
- The majority of our stakeholders take ownership of the WCSD Mission for 21st Century Learning.

Ownership of the Plan
The successful implementation and sustained effort to create a Culture of 21st Century Learning within WCSD requires a high level of cooperation among the district's administrative team. The administration must champion the Learning and Teaching Roadmap, provide appropriate organizational capacity, and ensure alignment to the district's goals and strategic plan.

Goals:

- WCS will maintain the plan at the District level by identifying individuals who are responsible for overseeing various aspects of the Learning and Teaching Roadmap.

HIGH IMPACT LEVEL

Information Technology Upgrades

Enabling the wireless infrastructure installed throughout the District to fully support a high-density ratio of wireless computing devices requires additional investments.

Goals:

- Upgrade and support current infrastructure to accommodate substantial increase in computing devices (see Equity of Access) and adoption of Google Apps for Education
- Ability to manage, keep secure and support all district and BYOD devices
- Adequate personnel to support changing and increasing needs

Equity of Access

HIGH IMPACT LEVEL

A major part of enabling WCSD moving to a 21st Century Learning environment is to provide more consistent access to computing devices for a larger number of students. That change will require WCSD to transition from computer lab based access to classroom access. It will also require the District to enable students who do not have access at home to take devices home for completion of digital based homework

Goals:

- Student to mobile computing device ratio is two-to-one (2:1) for all grade levels and all buildings.
- Students have access to devices, their documents, and online content at school and home.
- All teaching staff are assigned a device which allows on site and remote access.
- Classrooms have equity of access to instructional tools: projectors, speakers, software and applications

HIGH IMPACT LEVEL

Professional Development Realignment/Reorientation

WCSD needs to re-evaluate its Professional Development strategy and align it with new 21st Century Learning and Teaching methods and new state standards:

Goals:

- To prepare our staff for the demands of 21st Century Learning as represented by the Ohio New Learning Standards, Ohio's Next Generation Assessment and the new Ohio Teacher Evaluation System (OTES).

Job Embedded Professional Development

Creating a culture of support for teachers requires a systematic approach to professional development. The district needs to focus resources to supporting this area of the Roadmap and make sure the effort is sustained over time.

Goals:
- First year for each specific building where new student and teacher devices are roll-out have more intensive support than the long term sustainable activities.

MEDIUM IMPACT

The Second category of hindrances represents issues that are *MEDIUM LEVEL IMPACT ISSUES* to the acceptance and implementation of this technology Plan. Without addressing these issues, the effectiveness and efficiency of this Teaching and Learning Roadmap is substantially reduced. They are comprised of the following issues:
- Common Mission
- Develop 21st Century L&T and Technology Skills Competencies/Definitions and Assess All Teachers
- Data Driven Student Learning
- Formal Communication Channels and Roles
- Power User Demonstration and Pilot Projects

Common Mission

It is important that all levels of the WCSD organization operate using the same Mission for 21st Century Learning as developed by these Planning Participants; from Executive level to Departmental level, to Building level and to the classroom

Goals:
- The entire WCSD learning community will embrace and implement the Mission of 21st Century Learning

MEDIUM IMPACT LEVEL

Develop 21st Century L&T and Technology Definitions, Skills and Expected Competencies – Assess Staff

WCSD must articulate teacher 21st Century Learning and technology competencies, skills and definitions. Then assess all teachers against those standards and create a Culture of Support enabling them to gain those competencies and skills.

Goals

- Teachers will be assessed on competencies and skills for 21st Century Learning and technology. The District will create a Culture of Support resulting in teachers being able to articulate and demonstrate 21st Century Learning and technology competencies and skills.

MEDIUM IMPACT LEVEL

Data Driven Student Learning

Part of creating a Culture of 21st Century Learning requires that teachers know what their students did or did not learn today which informs the teacher of which student experiences should occur tomorrow.

Enabling data driven student learning requires:

- A minimum ratio of two-to-one (2:1) student to device ratio (See Equity of Access)
- Electronic based formative assessments tied to relevant student experiences
- Revised DATA WALL which provides easy access to student data for teachers

Goals:

- Using current technologies (i.e. ORM – Object Relation Management), create a student data dashboard application replacing the DATA WALL which meshes available formative assessments for each student. Application also enables viewing data by classroom or building.
- Create professional development training and opportunities for teacher to embed electronic formative assessments into the "student experience."
- Collect or find software and/or applications which electronically assess (paperless process) student learning in all content areas and for all grade levels.

MEDIUM IMPACT LEVEL

Formal Communication Channels and Roles

Typical of most K-12 organization in the United States, WCSD planning occurs primarily within singular silos without communication with or notification to other silos impacted by that planning. The District needs to develop a more formal process for communication between departments and silos. This also includes communication from district level down to building level and even to the classroom level and b-directional back up to district level.

Goals:

- Seamless communication between individual organizational silos as well to building and classroom with feedback from building back up to District.

MEDIUM IMPACT LEVEL

Power User Demonstration and Pilot Projects

Power Users represent a small percentage of the overall learning community of WCSD but as self-motivated people the District should use them for demonstration or pilot projects. Those activities will assist the District in determining what would be beneficial for all instructional spaces, minimizing large scale missteps or errors.

Goals:

- Create an annual allocation for these types of projects needs to be targeted and an application/selection process which includes controls measuring if the new projects provide improved student achievement needs to be developed.

LOW IMPACT

The third category represents items where the planning participants or MET observed as *LOW LEVEL IMPACT ISSUES* regarding goals and strategies that focus on enabling the staff and students to use technology in a more efficient and productive manner. They do not represent issues which will cause any concerns about the success of this Teaching and Learning Roadmap to fail, but resolution of these issues will greatly increase the efficiency, reducing the amount of friction required to overcome when implementing the plan. They are as follows:

- Software and Hardware Adoption Process
- Furniture
- Modeling Alternative Instructional Environments
- Student Technology Literacy

Software and Hardware Adoption Process

The District needs to establish standards regarding the acquisition of instructional software that is not a District wide tool, including mobile applications, while also ensuring that the application is aligned with the Ohio New Learning Standards. Additionally, the District also needs establish a standard regarding what hardware will be supported by the District.

Goals:

- Create a streamlined process for acquiring new instructional software applications that is enabled and enforced at the building level. Also create a list of standard hardware which the District will support from the centralized Service Desk.

Furniture

Classroom furniture which cannot be easily reconfigured to enable various student combinations for student-centered learning activities represents a major hindrance to 21st Century Learning. Many WCSD classrooms have been provided with inflexible tablet armchairs.

Goals:

- To replace existing restrictive furniture (i.e. desks with chairs attached) with mobile furniture which supports a more flexible/reconfigurable environment to promote collaborative student experiences.

Modeling Alternative Instructional Environments

Learning environments in WCSD are limited to traditional classrooms (with few exceptions represented by the few remaining "Open Classroom" facilities). An annual allocation for alternative learning spaces needs to be targeted with a application/selection process which controls measuring if the alternative learning environment actually improves student achievement.

Goals:

- Allocate annual funds for teachers to submit grant applications who wish to design and implement alternate instructional environments. These experiments will inform the District of new instructional methodologies on a reasonable risk exposure basis.

LOW IMPACT LEVEL

Student Technology Literacy

The ODE has not defined Student Technology Literacy nor do they hold Ohio Districts accountable for students gaining technology literacy. Yet, the Ohio New Learning Standards has technology enabled activities embedded throughout the curriculum. WCSD need to ensure that its students have the 21st Century technology skill sets matched to the requirements of the new Curriculum.

Goals:

- Enable every student to achieve their annual age appropriate technology literacy using the scaffolding as identified in the Ohio New Learning Standards

BUDGET IMPACT

The consultant reviewed Operating and Capital Budgets expenditures associated all of the issues contained within this plan and developed an average expenditure based on the past three fiscal years. That average was projected out over the next five years and reconciled against the current five year budgeting process. The leaders of the Departments impacted by this plan, the Treasurer and the Superintendent review those projections and agree with the following statement.

The District currently has two primary funding mechanisms in place which provide the majority of funds for implementing the strategies as outlined herein. Within the Operating Budget is an annual allocation called the New Technology Fund, currently funded for FY2014 through FY2018.

On the Capital Budget side, the primary source is a reallocation of funds set aside for desktop PC refresh. Between those two funds, the District has sufficient funding for the majority of the strategies outlined herein. The one exception is the "Furniture" strategy which will require a separate funding source.

TYPICAL WCSD CLASSROOM OF THE FUTURE

Within the context of WCSD instructional spaces, the following diagram provides a graphical representation of a typical WCSD classroom meeting the various expectations of this Learning and Teaching Roadmap.
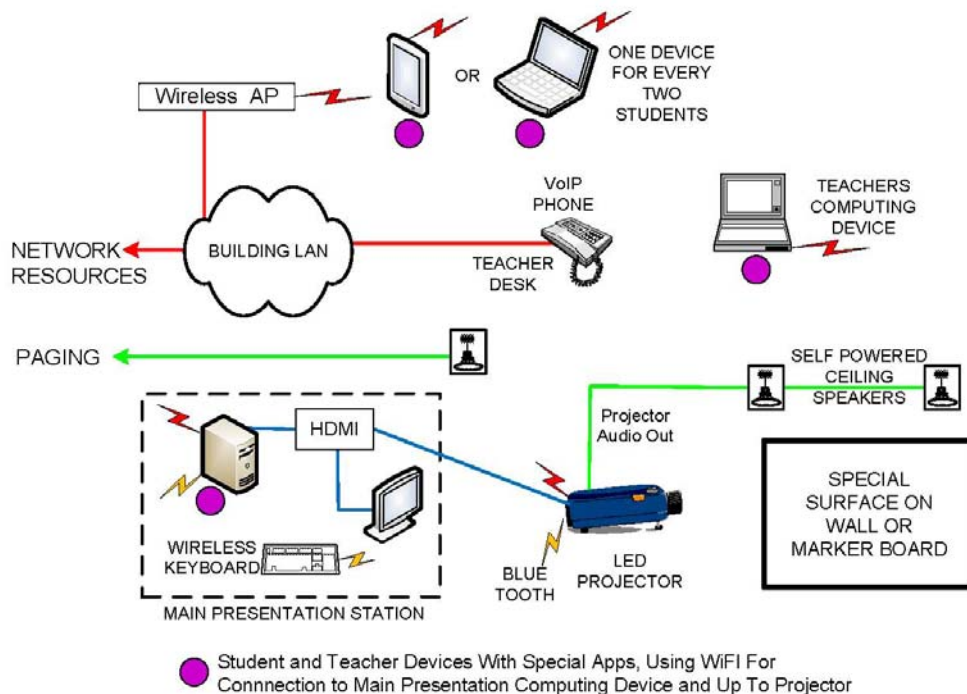
Student Device – WCSD student devices will be a wireless, web-browser based computing devices located in the classroom. It will have a simple application using the WiFi system and enabling mirroring of the device screen to the Main Presentation Station which is in turn connected to the projector. The goal is to provide sufficient number of devices for a two student to one device ratio. Pre-K through 2nd grade will be interactive tablets with 3rd grade and up devices being a netbook or Chromebook with a keyboard with a budget allocation of $250 per device.

Teacher Device – WCSD teacher devices will be a wireless, interactive tablet with ten inch screen and Bluetooth keyboard. It will have a simple application using the WiFi system and enabling mirroring of the teacher device screen to the Main Presentation Station which is in turn connected to the projector.

FIVE YEAR ROADMAP – HINDRANCES and OBSTACLE STRATEGIES

The table on the following pages places all of the strategies related to the identified Hindrances and Obstacles as delineated in the prior section into a time line, providing a clear articulation of "What needs to occur When," in order for this plan to be successful. For the reader who is not familiar with the education culture, the Fiscal Year (FY) runs from July 1 to June 30th. That means Quarter 1 (Q1) is July-Sept; Q2 is Oct-Dec; Q3 is Jan-Mar; and Q4 is Apr-Jun.