

SOFT LABORATORY NOTEBOOK: MS-ONE NOTE PILOT AT MATC

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WTCS meeting: Mid-State Technical College:
Wisconsin Rapids, WI

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PLATFORM SELECTION APPROACH

- ▶ Solicit key stakeholder input before selecting One-Note:
 - ▶ Goal: platform consistency with MSOE
 - ▶ MSOE encouraged me to select and try a platform as they had not (as of that date) selected a soft format laboratory report platform

KEY REQUIREMENTS/CRITERIA

SUBTITLE: WHY ONE-NOTE?

- ▶ Useful/relevant in industry:
 - ▶ Meets Industry Quality Management System (QMS) requirements (ISO-9001, etc.)
- ▶ Compatible with existing/embedded industry application preference:
 - ▶ Companies using MS-Office include Badger Meter, Inc. Rockwell Collins, Inc., Rockwell Automation (as of April, 2017)
- ▶ Operating system platform independent/neutral:
 - ▶ Tested on Windows™ 7 Pro, Windows™ 10, Mac OS X, and Linux - Mint v18.0
- ▶ Portable to MSOE without overhaul/re-work:
 - ▶ eliminate “another new learning curve” on BS-EE transition

PILOT LOCATION, DATES, AND COURSES

- ▶ Milwaukee Area Technical College: West Allis, WI 'West' campus
- ▶ Fall 2016 (Aug-Dec 2016)
 - ▶ DC / AC Electronics III (ELCTEC-112)
- ▶ Spring 2017 (Jan-May 2017)
 - ▶ Electronic Circuit Analysis (ELCTEC-124)

PILOT FORMAT

- ▶ Lab notebook required: student format choices:
 - ▶ 1) conventional hard-copy laboratory notebook or
 - ▶ 2) soft-copy laboratory One-Note lab notebook
- ▶ Pick a format and stay with it for entire semester
- ▶ Common due date for each laboratory report independent of student-chosen format

PARTICIPATION 'TAKE' RATE

- ▶ Fall 2016 eight samples
 - ▶ 62.5% of class submitted soft lab reports
 - ▶ 37.5% of class submitted hard copy lab reports
- ▶ Spring 2017 nine samples
 - ▶ 66.67% of class submitted soft lab reports
 - ▶ 33.33% of class submitted hard copy lab reports

CHALLENGES

- ▶ Authentication for instructor (to see lab report) varied depending on student input method
 - ▶ Instructor tested on Mac OS X El Capitan and Windows 7 Pro
 - ▶ Student OS approx. (40% Mac OS X and 60% Windows)

Once instructor authenticated first time (per-student), easy from there forward
- ▶ Some (5% of first attempts) embedded images (Bode plots, some Excel graphs) didn't show on instructor view
 - ▶ Success or lack thereof seemed to vary based on student MS-Office version
 - ▶ After notifying students of issue, all corrected/updated their One-Note fixing view

BENEFITS

- ▶ Students get to try something new !
 - ▶ Genuine excitement for a new way was met with great enthusiasm, energy, and drive
- ▶ Student familiarity with MS-Office
 - ▶ Simple (for students) integration between their MS-Office version and One-Note
 - ▶ No new software license required (student budget friendly)
- ▶ Approvals/Electronic Signature process
 - ▶ When another user (i.e. lab partner) logs-in to One-Note, their data validation signature and any other comments/inputs are automatically signed/identified with their log-in name identity making other contributors/sources easy to identify (track-able only to log-in verification)

GRADING METHOD

- ▶ Instructor added typed comments/specific detailed feedback immediately adjacent to pertinent section using red-colored font and added grade/score in red on last page of report
- ▶ Students reported ease in reading detailed feedback (MATC also uses Blackboard to upload grades per assignment as soon as graded)
- ▶ Fewer **red** pens and ink consumed during grading 😊

SAMPLE LAB REPORTS

- ▶ Log-in to One-Note
 - ▶ Show samples live

BARRIER TO OVERCOME TO ENABLE INDUSTRY IMPLEMENTATION

- ▶ Intellectual Property (IP) stored in 'the cloud'
 - ▶ (on someone else's server)
- ▶ Risk of IP loss
 - ▶ Data Security
 - ▶ Server hosting/protective environment
- ▶ Tracking concern
 - ▶ Google data
 - ▶ Akamai Technologies, etc.

QUESTIONS ?

Thank you for your time and attention