Employability Skills and their application to Project Management – Developing the IT Technical Workforce

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Workflow skills are the non-technical skills necessary for success in the workplace, including working in teams, collaboration, problem solving, verbal communication, written communication, dependability/work ethic, and planning/organizing for IT project management. This session outlines the Trello/Kanban workflow process utilized in an IT hardware upgrade project for two labs at Wharton County Junior College and the resulting lessons learned by all stakeholders of the project.
The National Convergence Technology Center

- Funded by the National Convergence Technology Center (NSF Advanced Technological Education Center)
- Manages the CCN community of practice featuring 70 schools in 28 states that regularly shares expertise and best practices
- Engages a national Business and Industry Leadership Team (BILT) to identify needed IT job skills to keep curriculum current with industry trends
- Trains faculty on emerging technologies through in-depth professional development
- Developing seven regional hubs to create new relationships and boost 2+2+2 articulation pathways
- Disseminates materials and processes via webinars, social media, and presentations

www.connectedtech.org  NationalCTC@collin.edu
Class 1 NSF College
CCN Employability Skills Summer Presentation and Workshop

This past summer, the NSF – CCN summer training included a presentation and workshop on the importance of IT employability skills needed in the workforce.
NSN Network Community of Practice Webinar:
Engaging Technician Faculty in Teaching Employability Skills
National Level - Framework

What are employability skills?

- U.S. Department of Education
  - Applied Knowledge
  - Effective Relationships
  - Workplace Skills
- Also, for secondary college and career readiness, one common citation is: National Research Council, 2012
  - Emphasizes cognitive, interpersonal, intrapersonal
- Our report may be found here:
  - employabilityskills.org

Link to Employability Skills Matter Video
State Level – SLOs and Assessment
Local Level

Business and Industry Leadership Team (BILT)
Otherwise known as our Computer Science Advisory Board

Programs, Degrees, and Certificates of study
Work Based Learning

WBL Framework

Alignment of Classroom and Workplace Learning

Application of Academic, Technical, and Employability Skills in a Work Setting

Support from Classroom or Workplace Mentors
Alignment of Classroom and Workplace Learning

This means that comprehensive WBL experiences:

- help meet industry demands for a more skilled workforce by providing opportunities for students to receive training, learn skills and gain experience in all aspects of an industry;
- map academic content to authentic workplace tasks and integrate workplace tasks and classroom instruction;
- allow students to reflect on their learning process and experience; and
- require training for instructors on how to integrate WBL experiences into curriculum and instruction.
Application of Academic, Technical, and Employability Skills in a Work Setting

This means that comprehensive WBL experiences:

- are based on rigorous academic and employability skill requirements; and
- include in-depth and hands-on work experiences (either on site or through simulated/virtual methods), with activities ranging from career awareness and exploration to career preparation and training.
Support from Classroom or Workplace Mentors

Support from a Classroom or Workplace Mentors

This means that comprehensive WBL experiences:

- promote student engagement through mentorship from supervisors, instructors, and WBL coordinators;
- allow students to develop relationships with industry and community professionals;
- are monitored and evaluated by workplace supervisors, classroom instructors, or WBL coordinators; and
- offer training for mentors on providing students with industry-specific support; general career and education guidance; personal and professional growth; and a caring, emotional connection.
Application of those skills...

Map academic content to authentic workplace task and integrate workplace task into classroom instruction
Machine Learning, Agile Network, Trello/Kanban opportunity at WCJC
Dr. Jian Tao – Texas A&M
Todd Little – Agile Network Kanban training at Houston’s TechFest
Trello/ Kanban
Kan “Visual” ban “Card”
Visual Card

kan-ban
/'känbän/
noun
1. a Japanese manufacturing system in which the supply of components is regulated through the use of an instruction card sent along the production line.
2. an instruction card used in a kanban system.
3. plural noun: kanbans
Couple of the Kanban boards... provides input into Trello for ML/AI
IT Lab Project – Students utilize the Trello/Kanban process to complete a hardware upgrade for two computer labs in a two week Kanban sprint.
Software Solution...

Hard Disk Manager for Windows
Data safety made simple for novice users and experts alike

Paragon Hard Disk Manager for Business with Server Support
An award-winning Data Management software for your infrastructure
Powerful and cost-effective set of disk management utilities for maintaining physical, virtual and hybrid IT environments of all sizes

Microsoft NTFS for Mac by Paragon Software
A New Perspective on Windows Partitions
Hardware solution...
Bonus day...

Lessons learned:

High degree of student engagement—both campuses

Combined solutions to opportunities presented

Departmental solution to a need for our students

Publish and present opportunities for WCJC at HITEC (get our name out there)

Repeatability of project

ML/AI skills modeling
HI-TEC 2020 in Portland

Enter Kanban project boards into Trello

“BILT” Dell Member at CCN

Future – Trello can export project data silos.

Exporting a JSON file from Trello

Trello lets you work more collaboratively and get more done.

Trello’s boards, lists, and cards enable you to organize and prioritize your projects in a fun, flexible, and rewarding way.

JSON File for ML/AI
Workflow from Man to Machine...
“Machine learning will also be applied to IT service management (ITSM) to change the way help desks work. The benefits might include predicting issues and problems proactively, improving search capabilities and knowledge management, and classifying and routing issues with greater ease”
Benefits of IT ML Workflow

- Service Requests Will Have Auto-Approvals and Custom Workflows
- Level 1 Incidents Will Be Resolved Without Technicians
- Problems Will Be Anticipated and Prevented
- Highly Dynamic Change Workflows Will Be Created
- Intelligence Will Impact Asset Life Cycle Management
AI/ML Podcast Episodes

THE PATH TO AI

Link to the Path to Artificial Intelligence Podcast

AI MYTHBUSTING

Link to the Artificial Intelligence Mythbusting Podcast

MAN, MEET MACHINE

Link to the Man, Meet Machine Podcast
Questions
Thanks!
Works cited

Link to the Necessary Skills Now Homepage

Link to ITSM Machine Learning helping Help Desk

Link to SRI case study Making Class Learning Relevant/

Link to school reform initiative

Link to SRI Homepage