The (mis)alignment of IT education and IT workforce needs: Challenges and opportunities in the North Florida region.

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Background
- Information Technology (IT) is one of the fastest growing industries (US-DOL, 2015).
- Higher education, including many LIS programs and iSchools, offer undergraduate and graduate IT degrees; and
- Perspectives of employers is critical for educators to develop effective and current IT curricula (Downey, McMurry & Zeitmann, 2008; Hwang & Soo, 2010).

Problem Statement
Scholars have found that IT graduates are sometimes lacking key employability skills, particularly soft skills (Downey, McMurry & Zeitmann, 2008; Gordon, 2013; Hunt et al., 2011; Lee & Han, 2008; Woodward et al., 2013).

Study Objectives
- This paper updates preliminary findings that explored the alignment of the IT skills desired by IT employers and those included in Northwest Florida two-year IT degree curricula.

Research Questions
The overall project is guided by the following research questions:
1. How do the IT/broadband skills gain through two-year community college programs compare to the needs expressed by employers in non-metro/metro areas?
2. How do the IT/broadband skills gain through two-and four-year community college programs compare to the needs expressed by employers in non-metro/metro areas?
3. What, if any, gaps exist between the IT/broadband skills reported by IT employers and those included in Northwest Florida two-year IT degree curricula?
4. What, if any, differences are there between the skills needed for IT/broadband employees in non-metro and metropolitan areas?
5. How can two-and four-year college IT/broadband program curricula be modified to best meet the specific needs of employers and IT/broadband employees in non-metro/metro areas?

Methods
This study employs a holistic, mixed-methods approach:
- Semi-structured interviews: IT employers (n=18), New professionals (n=23);
- Text-mining and Natural Language Processing of two-year IT degree program syllabi (n=31) from regional community/state colleges;
- Content analysis of regional job postings (n=213) (Lee et al., 2014);
- Classroom observations at using the COPUS protocol for undergraduate STEM programs (Smith et al., 2013);
- Automated data mining of curricula and job postings;
- Content analysis of IT employers’ & new professionals’ interview data;

Limitations
- Small sample size, qualitative interviews, and narrow focus on the North Florida region makes findings less generalizable;
- However, the findings and themes uncovered here may resonate with other regions, particularly in rural areas.

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        Physical Computing (Other)        System Fundamentals (Emergent)          Coding/Programming (Emergent)          Industry Partnerships (Emergent)          Experiential Learning (Emergent)
                                  0%                         1.6%                              7.2%                                  1.3%                                  1.3%
                                    %                           1.6%                               7.2%                                  1.3%                                  1.3%
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Key Insights
- Basic technical competencies are considered a fundamental baseline;
- Employers desire specialized IT professionals with strong soft skills, such as interpersonal skills, self-management, and customer service;
- New IT professionals reported the importance of oral and written communication, interpersonal skills and self-management (preliminary analysis);
- Classrooms provide greater emphasis on technical competencies over soft skills and traditional lecturing over participatory activities, such as discussions, hands-on & scenario-based activities;
- No discernable difference in metropolitan vs. non-metro areas skills requirements; and
- Rural employers reported difficulties recruiting and retaining skilled IT professionals due to poor broadband infrastructure & competitive salaries in non-rural areas.

Emergent Themes
1. Importance of experiential learning including On-the-job training, Internships, Work experience, and Service learning.
2. Expect industry partnerships between IT programs and local employers to improve alignment of needed skills/competencies with IT curricula.

Conclusion & Next Steps
- There are significant misalignments between the skills requested in job ads, expected by employers, and taught in regional North Florida IT degree programs.
- Include Soft skills or general competencies in IT curriculum to reflect industry needs.
- Conduct further research to promote and secure experiential learning opportunities and build industry partnerships especially for the benefit of rural communities.
- Triangulate multiple data points to comprehensively identify major themes and insights.
- Conclude by providing empirically-based recommendations to strengthen IT educational opportunities and workforce in the North Florida region.

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- A list of references can be found at http://www.fsu.edu/node/3636 or via this QR code here:

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