

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, McMurtrey & Zeltmann, 2008; Hwang & Soe, 2010).

Problem Statement

- Scholars have found that IT graduates are sometimes lacking key employability skills, particularly *soft* skills (Downey, McMurtrey & Zeltmann, 2008; Gordon, 2013; Hunt et al., 2011; Lee & Han, 2008; Woodward et al., 2013).

Study Objectives

- This poster 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.
- The overall goal of the NSF project is to revise regional IT programs to better meet the needs of regional IT employers.

Research Questions

The overall project is guided by the following research questions:

- How do the IT/broadband skills graduates gain through two-year community college programs compare to the needs expressed by employers in non-metro/metropolitan areas?
- How do the IT/broadband skills graduates gain through two-and four-year college programs compare to the skill sets new professionals identify they need after they are hired as IT employees in non-metro/metropolitan areas?
- What, if any, gaps exist between the skills non-metro/metropolitan employers report their IT/broadband employees need and the skill sets new professionals report they need to be successful as IT/broadband employees?
- What, if any, differences are there between the skills needed for IT/broadband employees in non-metro and metropolitan areas?
- 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/metropolitan areas?

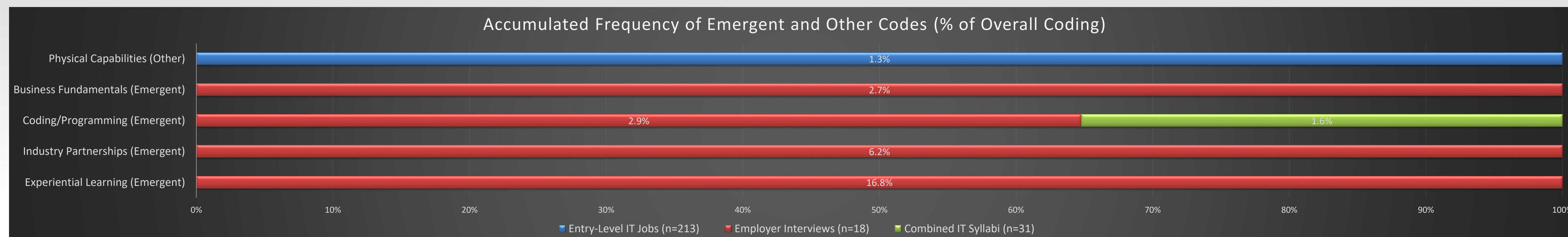
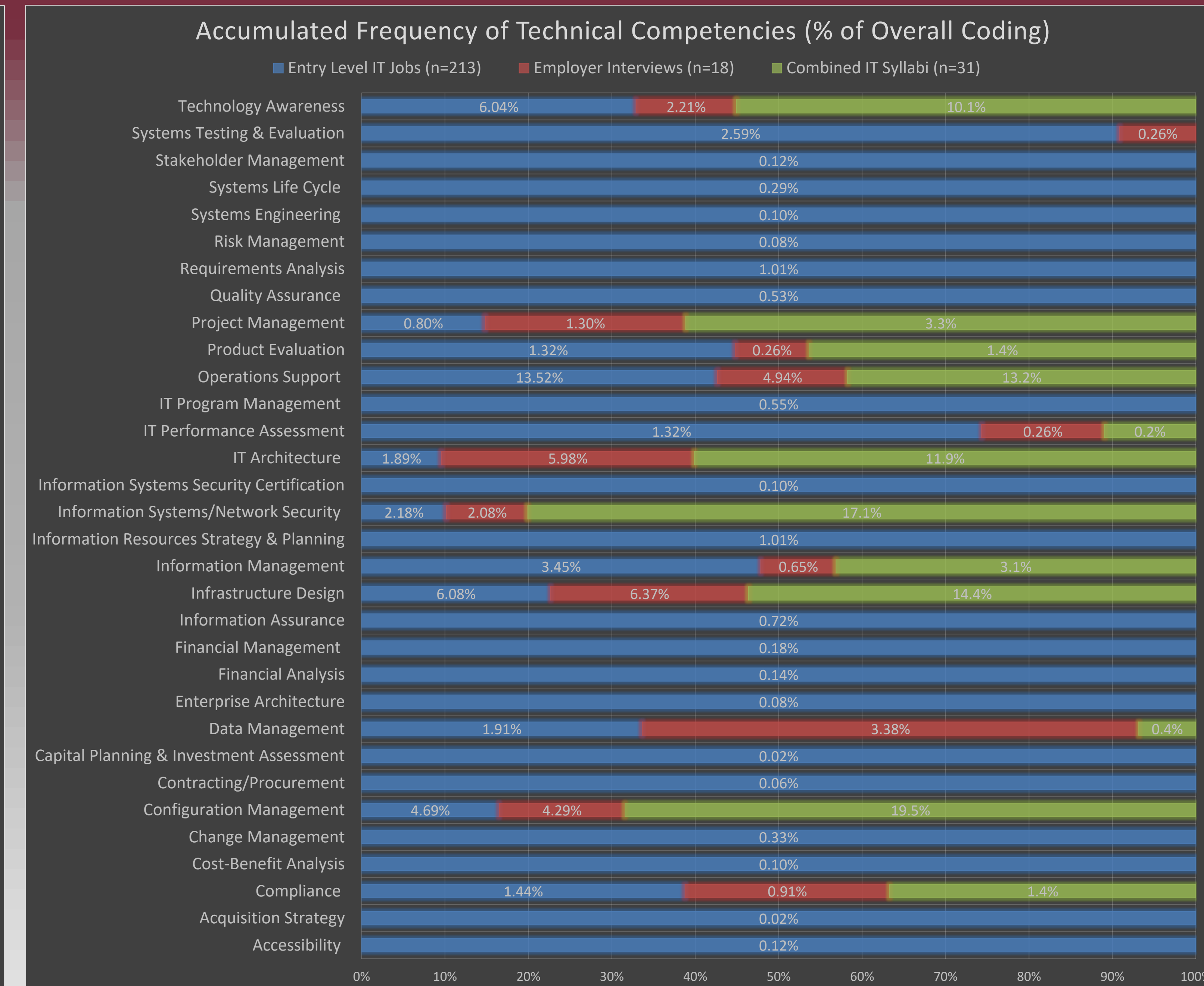
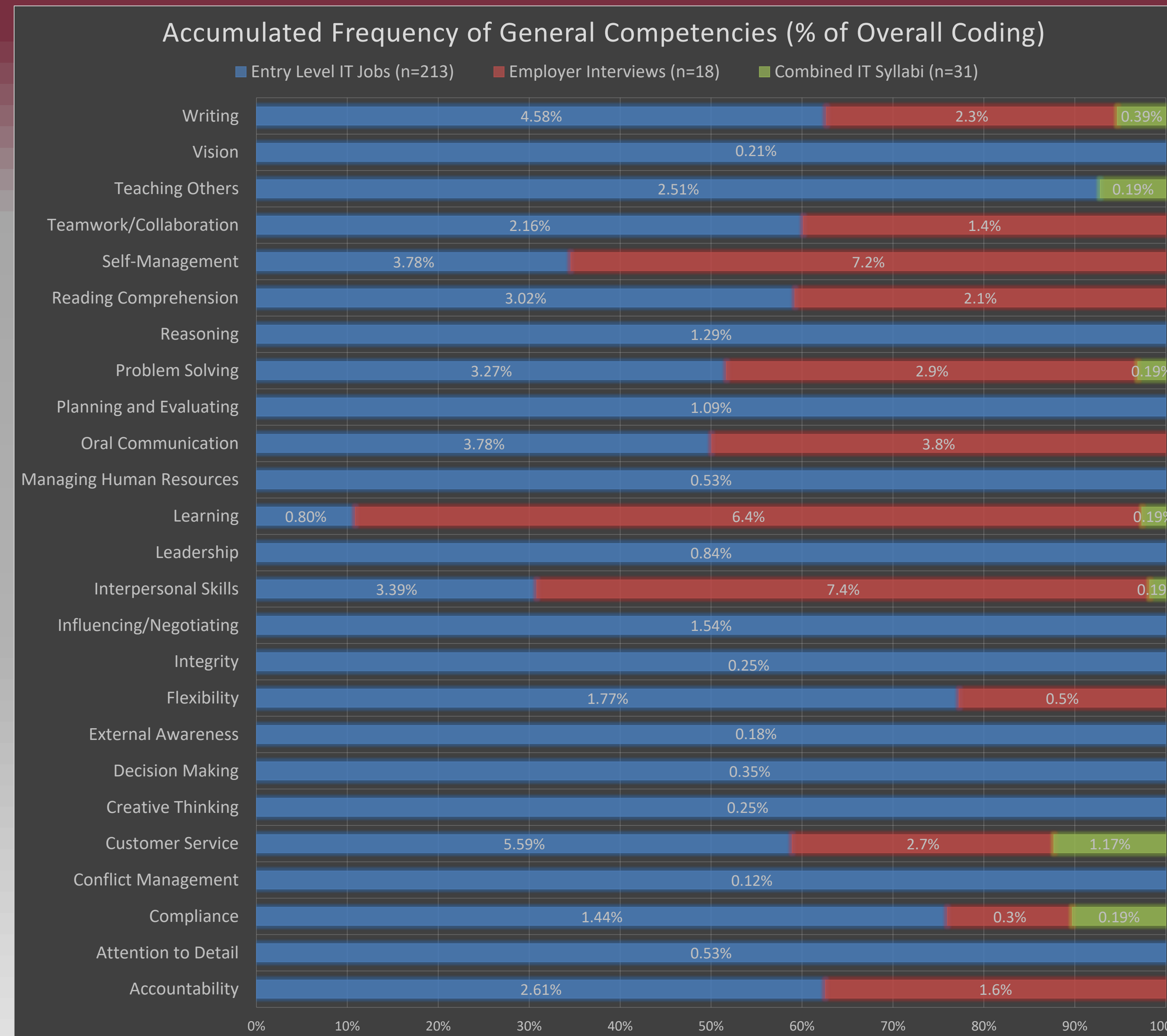
Methods

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;
- Data analyzed using US Office of Personnel Management (2011) Competencies Model for IT Program Management and FL Department of Education (2013) Career and Technical Education (CTE) IT Framework.

Limitations

- Small sample sizes, 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.



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, learning, 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 metro 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

- Importance of experiential learning including On-the-job training, Internships, Work experience; and Service experience.
- 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, & taught in regional North Florida IT degree programs.
- Include *Soft* skills or general competencies in the IT curriculum to reflect industry needs .
- Conduct future 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 the IT educational opportunities and workforce in the North Florida region.

Acknowledgements & References

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



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