Using learning taxonomies as a model for the creation of a model for Information Assurance Curriculum development from Undergraduate to PhD

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Introduction

- Information Security Curriculums
  - Undergraduate
  - Masters
  - Doctoral (PhD and DBAs)
    - Associate level
    - Community colleges
    - K12
    - Certificates
Information Security Standards

- Committee on National Security Systems (CNSS)
- IEEE
- National Security Agency’s (NSA) Information Security Assessment Model (IAM)
- The INFOSEC Assurance - Capability Maturity Model (IA-CMM)
- ISACA Model Curriculum for Information Security Management
Problems encountered

- Teaching to a certification
- Same certification offered at different levels
- Overlap
- Same standard at same degree level
- Student frustration
- Not critically thinking
- No scholarly thinking
- More application at all levels

- Additional areas added e.g.,
  - Project Management, Finance, Business Skills
  - More hands on
Main Problem

- Learning models?
  - How to learn
  - Understand, evaluate
  - Analysis
  - Create
  - Learn
Learning Models

- Bloom’s (1956) taxonomy of educational objectives
- Anderson’s and Krathwohl’s (2001) taxonomy
- Fink’s (2003) significant learning model
- S.I. Hayakawa 1991 ladder of Abstraction
- Conscious Competence Adult Learning Theory
Bloom’s taxonomy of the Cognitive Domain

- Evaluation
- Synthesis
- Analysis
- Application
- Comprehension
- Knowledge

Anderson’s and Krathwohl’s taxonomy

- Create
- Evaluate
- Analyze
- Apply
- Understand
- Remember

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<thead>
<tr>
<th>The Knowledge Domains</th>
<th>Remember</th>
<th>Understand</th>
<th>Apply</th>
<th>Analyze</th>
<th>Evaluate</th>
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Fink Significant Learning Model

- Learning How to Learn
- Caring
- Human Dimension
- Integration
- Application
- Knowledge
- Foundational

Fink’s Interactive Nature of Significant Learning
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### Information Assurance Curriculum (Phase One)

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Information Assurance Curriculum (Phase Two)
Conclusion

- Benefits
  - Robust Curriculum
  - Minimum overlap
  - Learner Satisfaction
  - Clear upward path
  - Continued Learning
  - Reinforced interactive learning
Questions?

• Thank you
• Dr. Steven Brown
• Professor Mary Brown
References