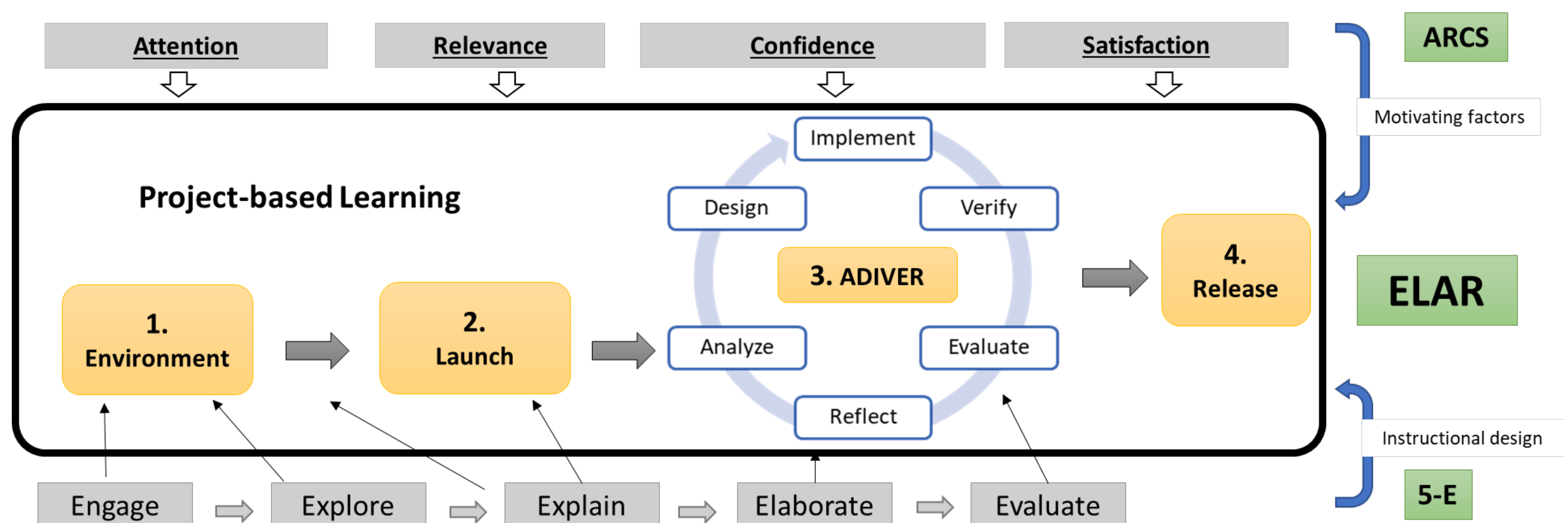


SaTC: EDU: Collaborative: Incorporating Sociotechnical Cybersecurity Learning Within Undergraduate Capstone Courses

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Key Problems

Problem 1: Typical computing curricula do not require any courses in cybersecurity.

Consequence: Students graduate with NO relevant proficiency needed for the workplace.

Problem 2: Cybersecurity electives often cover only technical topics.

Consequence: Students have no idea of the complex sociocultural aspects of cybersecurity.

Scientific Impact

We design, deliver, and evaluate a suite of learning modules and an knowledge assessment.

Capstone projects at UCI & IU

Capstone projects in other institutions

Computing disciplines & software industry

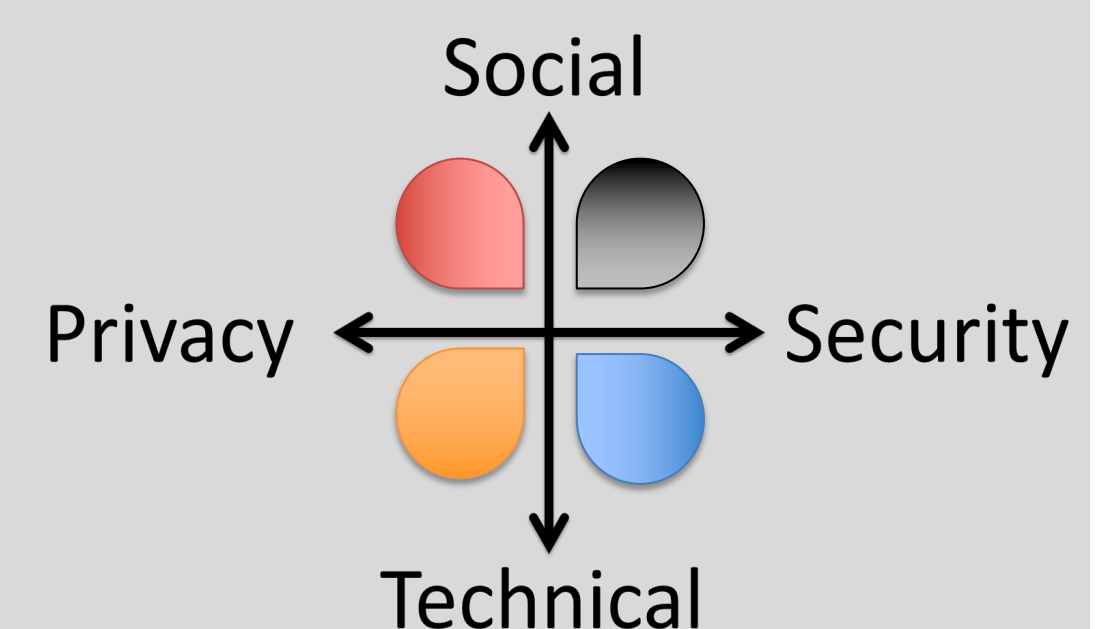
Solutions

1. Obtain advisory board and clients input;
2. Develop the learning modules and knowledge test;
3. Assess students' pre-course proficiency;
4. Deliver the learning modules;
5. Assess post-course proficiency, and project vulnerability and cybersecurity levels.

Prior research



Ideation card activity



Concept mapping

Broader Impact: Society

1. Senior undergraduates from UCI & IU who will receive the learning modules;
2. Graduates' career development;
3. Educators from other institutions;
4. Workforce development in the software industry.

Broader Impact: Education & Outreach

1. Postdoctoral mentoring & REU;
2. Cross-discipline publications in various forms;
3. Open access of protocols, instruments, and codebook;
4. Industry outreach

Broader Impact: Quantified

1. Direct impact the 100-150 senior undergraduates;
2. A broader adoption of the learning modules by other institutions will amplify the impact;
3. Directly influence the security and privacy of real-world systems, used by large populations of users.

Award ID#: 1821782