


Concurrent Presentation Session
SELF-DIRECTED AND SELF-REGULATED LEARNING



A Heuristic Evaluative Framework for Mobile Self- Regulated Learning Design

Stephanie McNicol

Arizona State University

Additional Authors:

Scotty D. Craig, Ph.D., Russell J. Branaghan,
Ph.D. & Rod D. Roscoe, Ph.D.,

Social: #ADLiFEST | WiFi: HILTON_MEETING / Password: ADLiFEST 

A Heuristic Evaluative Framework for Mobile Self- Regulated Learning Design

Rod D. Roscoe, [Stephanie McNicol](#),
Russell J. Branaghan, and Scotty D. Craig
Arizona State University

Overview

- **Defining SRL**
 - phases, strategies, and challenges
- **Designing SRL-supportive technologies**
 - Heuristic Evaluative Framework
 - The Platform Principle
 - The Support Principle
- **Example** (work in progress): PERLS

What is SRL?

- **Self-Regulated Learning**

“iterative, metacognitive process in which learners make **plans**, take **action** to complete tasks, **monitor** their progress and outcomes, and **adapt** their plans and strategies to improve future performance and work”

- **strategies** are fundamental to SRL

Phases of SRL

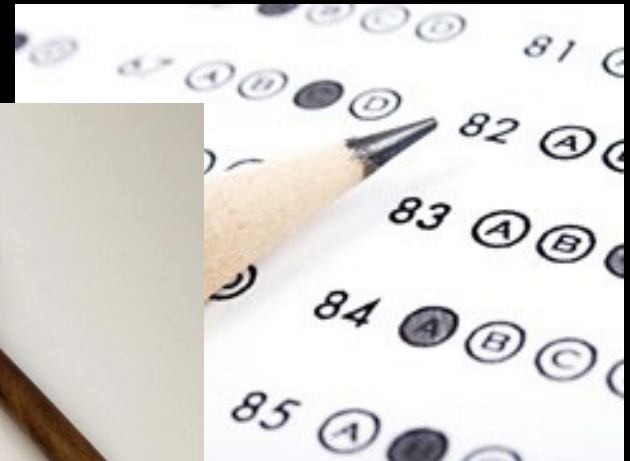
Planning



Enacting



Adapting



Monitoring

(Many) Challenges for SRL

- Although “self” driven (by definition), **novice learners** often need **substantial external assistance** to self-regulate
 - may **not know** effective strategies; may not choose best strategies for the task
 - may **not monitor** themselves well; use **poor cues** and make **inaccurate** judgments
 - **low motivation** (e.g., interest, self-efficacy)

Encouraging SRL

- Evidence shows that self-regulated learners generally **outperform** less-regulated learners
- So... how can we **encourage** and **assist** learners to be more self-regulated?
 - i.e., to overcome challenges/obstacles of SRL
- **computer-based and mobile technologies**
 - how to **design** SRL technologies effectively?
 - how to **quickly evaluate** such technologies?

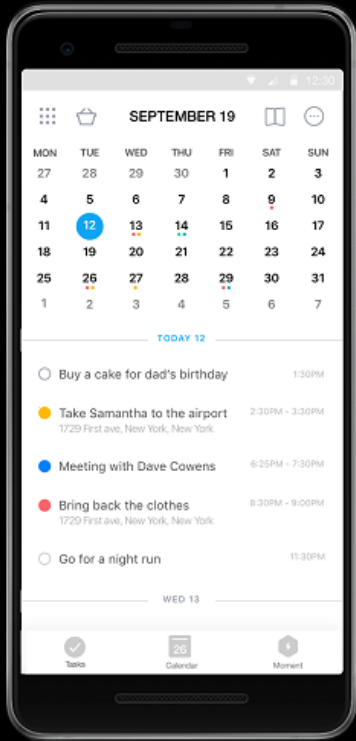
Heuristic Evaluative Framework

- How can designers, developers, researchers, and educators **quickly** assess how well an SRL technology (or design) supports SRL?
- **usability assessment approach**
 - outline core design principles
 - e.g., heuristic evaluation, document reviews, cognitive walkthroughs, etc.
 - evaluation templates and “checklists”

The Platform Principle

- SRL-supportive technologies should **offer platforms** (i.e., functions, features, and tools) **for one or more “phase” of SRL:** planning, enacting, monitoring, and adapting
- platforms enable specific **tasks** and **strategies** – allow learners to “do SRL”

Example Platforms



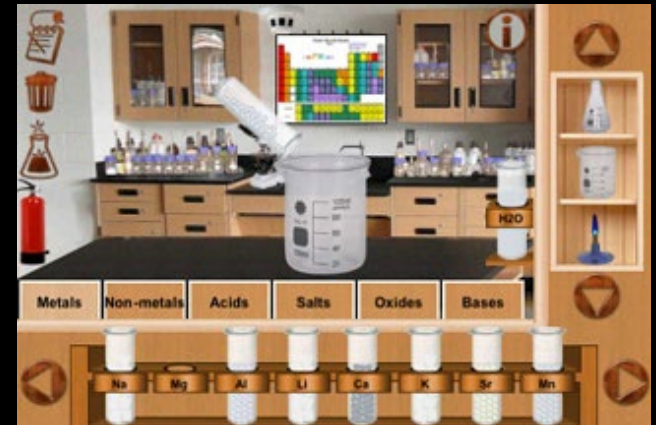
a platform for **scheduling** tasks and activities (“calendar tool”)



platforms for **studying text** (“ebook tool”) and **annotating** the info (“notetaking tool”)



platforms for safely **exploring complex systems and processes** (“simulator tools”)



The Support Principle

- SRL-supportive technologies should **scaffold** learners' **strategies, self-monitoring** and self-assessment, **motivation**, and **independence**
- platforms provide opportunity to engage in SRL strategies... but supports **help** learners make **best use** of those platforms

Supports for SRL

Instruction



Prompts



Feedback



Assessment

Heuristic Evaluative Framework

- How can designers, developers, researchers, and educators **quickly** assess how well an SRL technology (or design) supports SRL?
- We offer a **systematic approach** for **mapping out** whether and how systems address SRL platforms and supports
 - what features and tools are offered?
 - how are they supported?
 - how are they documented?

Heuristic Evaluative Framework

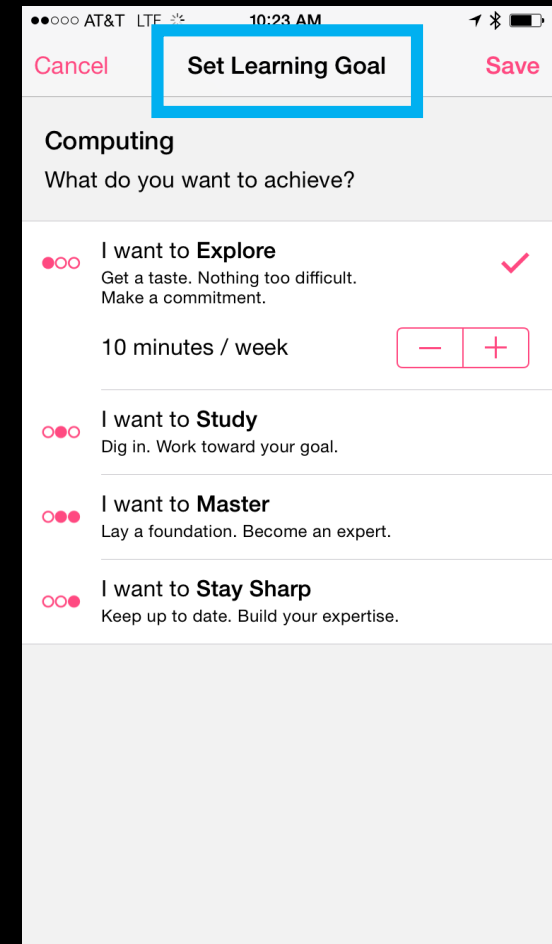
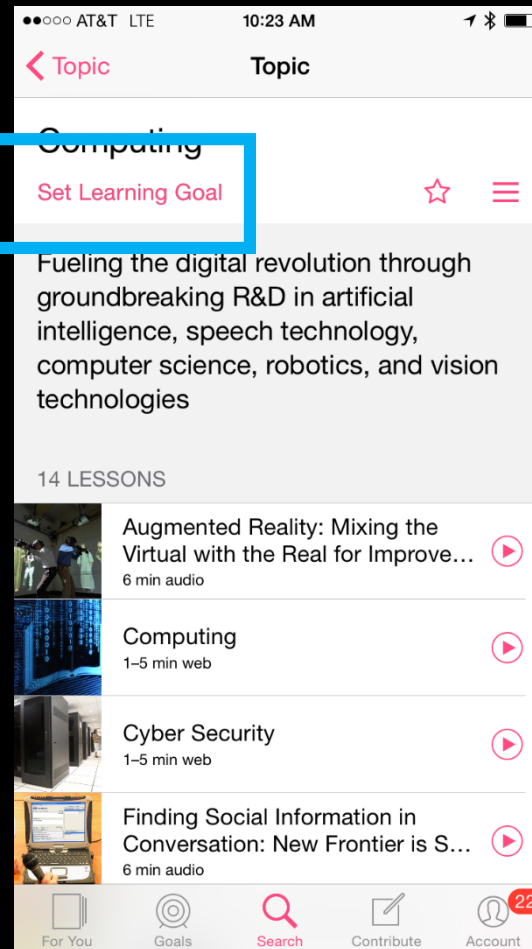
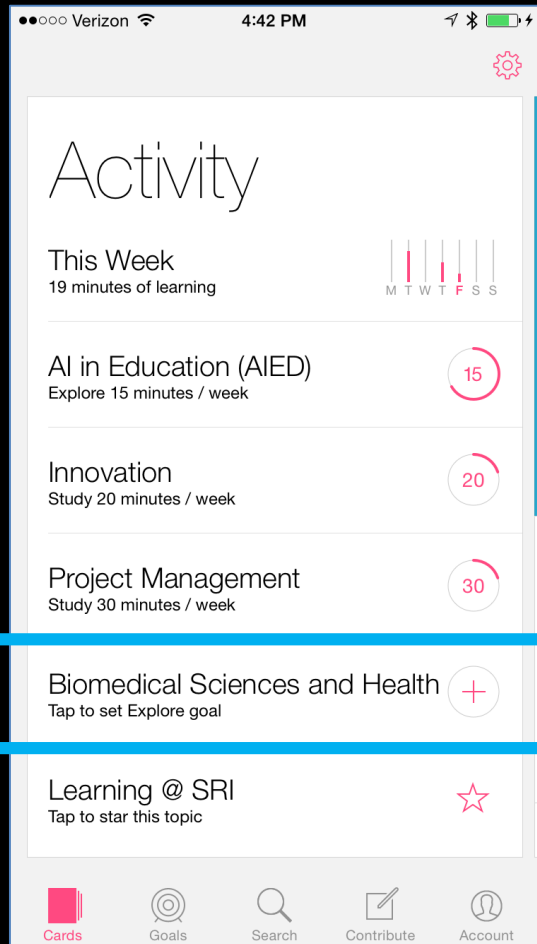
- **multiple sources** can be consulted
 - reviews and walkthroughs of iterative versions; prototypes and wireframes
 - supporting documentation, such as “spec docs” and user manuals
- identify the occurrence and implementation for platforms and supports

	Planning	Enacting	Monitoring	Adapting
Platform?	Yes No	Yes No	Yes No	Yes No
Features, Functions, and Tools				
Support?	Yes No	Yes No	Yes No	Yes No
Strategies				
Assessment				
Motivation				
Independence				

Example from PERLS

- **PER**vasive **L**earning **S**ystem
 - mobile learning system that guides learners through a self-regulated micro-learning model
- **Ongoing project** to evaluate, redesign, and update PERLS (i.e., motivation for this work)
- Document platforms and supports systematically as evaluation unfolds

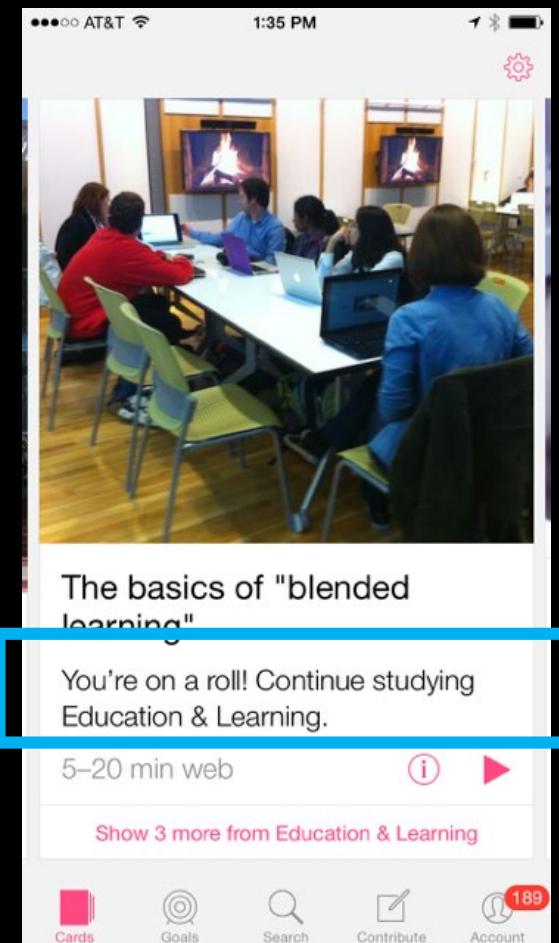
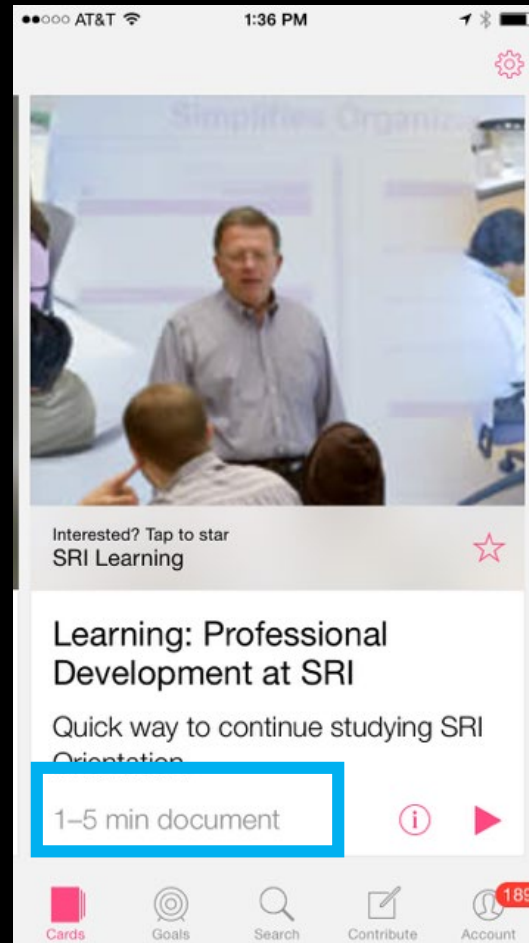
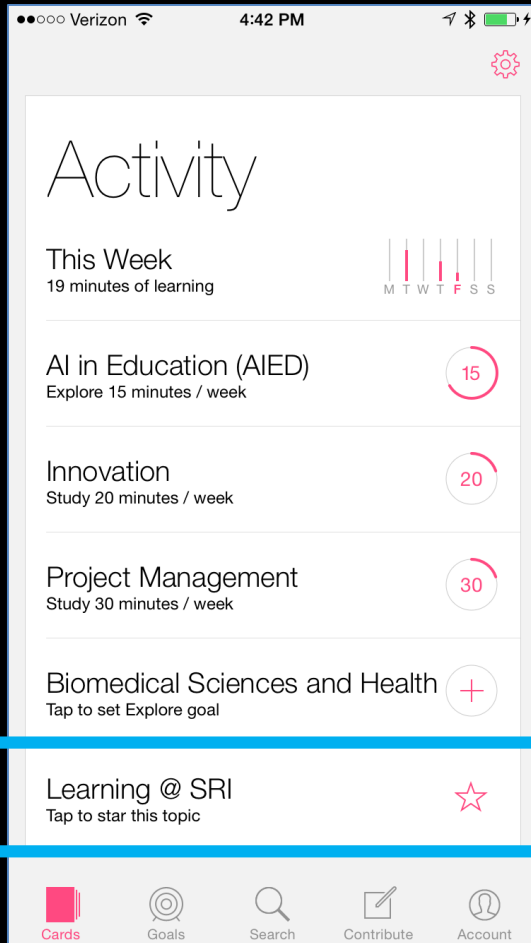
Platform: Setting Goals (Planning)



system includes **tools for choosing topics and setting learning goals**; setting goals at different levels (e.g., explore vs. master)

	Planning	Enacting	Monitoring	Adapting
Platform?	Yes No	Yes No	Yes No	Yes No
Features, Functions, and Tools	<i>goal-setting</i>			
Support?	Yes No	Yes No	Yes No	Yes No
Strategies	<i>multiple goal types</i>			
Assessment				
Motivation				
Independence				

Support: Motivation, Interest



supports **motivation** by allowing users to **choose topics**; provides **encouragement** (also a **platform for accessing content!**)

	Planning	Enacting	Monitoring	Adapting
Platform?	Yes No	Yes No	Yes No	Yes No
Features, Functions, and Tools	<i>goal-setting</i>	<i>direct access to content via text/web (reading)</i>		
Support?	Yes No	Yes No	Yes No	Yes No
Strategies	<i>multiple goal types</i>			
Assessment				
Motivation		<i>topic choice; encouragement</i>		
Independence				

Conclusion

- systematic, comprehensive, grounded in SRL theory and principles
- fast and efficient
- enables “map” of how a system currently addresses SRL platforms and supports, thus revealing gaps and opportunities
 - e.g. gap: a great platform but poor support

Thank you! Questions?