



The 2017 Overview of the GIFT Authoring Experience

Scott Ososky • May 10th, 2017

**BACKGROUND**

DESIGN GOALS

PRIOR WORK

NEW USER EXPERIENCE

USER RESEARCH

OPPORTUNITIES

LOOKING AHEAD

JOIN THE CONVERSATION

Authoring supports goals within the GIFT project:

- Decrease the effort and skill threshold required for authoring ITSs
- Support users in organizing their domain content and knowledge
- Support effective instructional strategies
- Allow for rapid prototyping of intelligent tutoring systems (ITS)
- Leverage standards for integration of external content (media and software applications)
- Promote content reuse and interoperability through standards

The Authoring UX is a continuous, group effort:

- Input from community (forums, GIFT Symposium, projects, etc.)
- Observation and use of existing tools



BACKGROUND

DESIGN GOALS

PRIOR WORK

NEW USER EXPERIENCE

USER RESEARCH

OPPORTUNITIES

LOOKING AHEAD

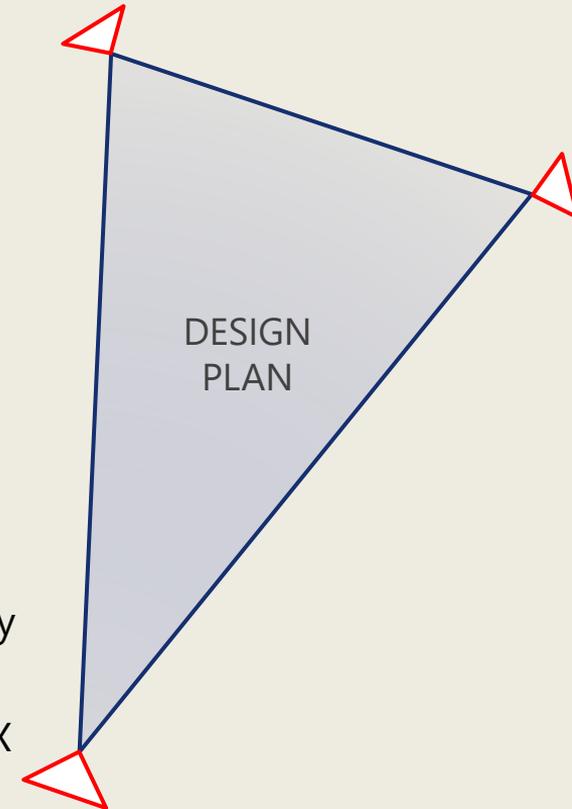
JOIN THE CONVERSATION

Informed by

- Stakeholder interviews
- Project briefings
- Guerilla user research
- Heuristic Evaluation

Goals

- Single integrated tool
- Reduce excise
- Use appropriate language and labels
- Increased help and support
- Leverage the interface to suggest functionality
- Familiar and intuitive interactions
- Integrate authoring into a larger authoring UX
- Better onboarding process





BACKGROUND

DESIGN GOALS

PRIOR WORK

NEW USER EXPERIENCE

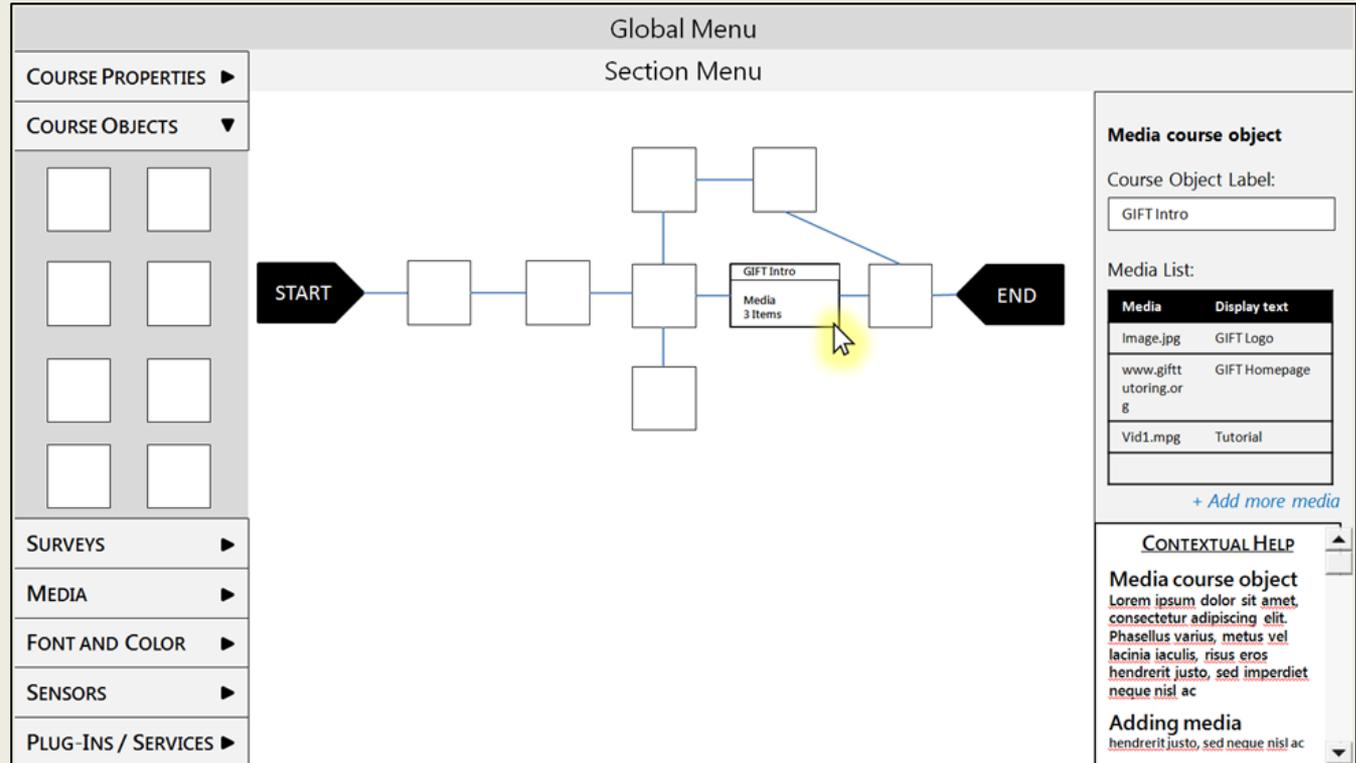
USER RESEARCH

OPPORTUNITIES

LOOKING AHEAD

JOIN THE CONVERSATION

A unified experience





BACKGROUND

DESIGN GOALS

PRIOR WORK

NEW USER EXPERIENCE

USER RESEARCH

OPPORTUNITIES

LOOKING AHEAD

JOIN THE CONVERSATION

Task-driven interfaces

Global Menu

Pre-lesson Food Survey Discard Changes Preview Survey SAVE and Close

Display survey title

Writing Mode Coding Mode

Q1 What is your favorite type of pizza? Response output

Thin Crust

Sicilian Style

Deep Dish

1

2

3

Q2 Soft tacos are the best kind of taco. Correct Answer(s)

True

False

X

+ Add survey item + Insert Manual Page Break

Metadata

Concept [Foods]

Difficulty [Easy]

Advanced Options ▼

...

...

...

...

Selected Object Properties

Contextual Help



BACKGROUND

DESIGN GOALS

PRIOR WORK

NEW USER EXPERIENCE

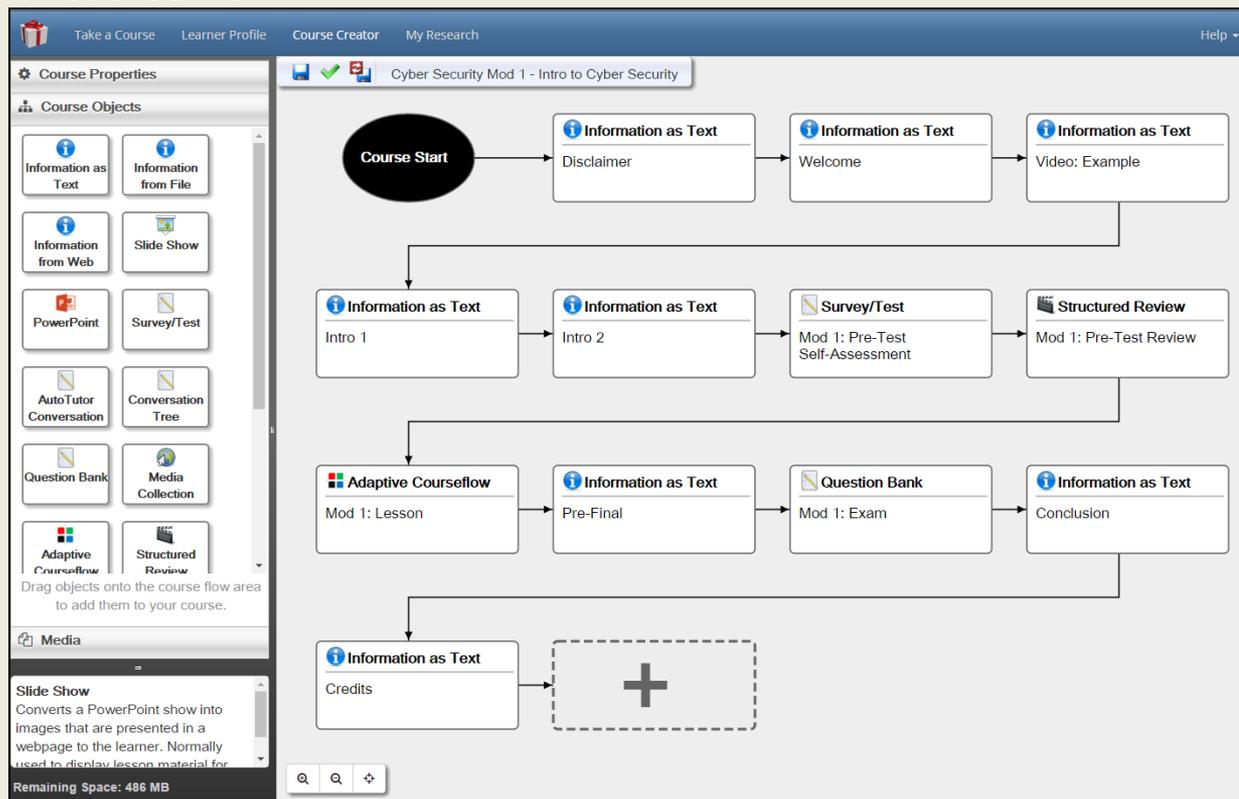
USER RESEARCH

OPPORTUNITIES

LOOKING AHEAD

JOIN THE CONVERSATION

Visual course flow





U.S. ARMY
RDECOM

UNCLASSIFIED

The 2017 GAT

ARL



BACKGROUND

DESIGN GOALS

PRIOR WORK

NEW USER EXPERIENCE

USER RESEARCH

OPPORTUNITIES

LOOKING AHEAD

JOIN THE CONVERSATION

Configurable Interface

The screenshot displays the 'Course Creator' interface for 'Cyber Security Mod 1 - Intro to Cyber Security'. On the left, the 'Course Properties' panel shows a 'Course Objects' list with options like 'Information as Text', 'Information from File', 'Information from Web', 'Slide Show', 'PowerPoint', 'Survey/Test', 'Auto Tutor Conversation', and 'Conversation Tree'. The main area shows a course flow diagram starting with 'Course Start', leading to 'Disclaimer', 'Welcome', 'Video: Example', 'Intro 1', 'Intro 2', and 'Structured Review'. The 'Intro 1' node is highlighted with a dashed blue border. On the right, a content editor window titled 'Intro 1' shows a text editor with the following content:

Good cyber security practices start with you. In this module we will review the following basic concepts:

- Online Privacy
- Online Security

in the context of web-browsing, communication, and application usage.



BACKGROUND

DESIGN GOALS

PRIOR WORK

NEW USER EXPERIENCE

USER RESEARCH

OPPORTUNITIES

LOOKING AHEAD

JOIN THE CONVERSATION

WYSIWYG Survey Editor

The screenshot displays the WYSIWYG Survey Editor interface. At the top, there is a navigation bar with options: Take a Course, Learner Profile, Course Creator, My Research, and Help. Below this is a toolbar with buttons for Writing Mode and Scoring Mode, along with icons for Import from .qsf, Save, Settings, Preview, and Refresh. The main editing area shows a question titled "Q1" with a checked status. The question text is: "A Cloud storage is a way to keep your file saved on third parties services over the internet. Common examples are Hubic, Dropbox or Amazon Cloud Drive. You have been using your personal cloud storage to backup photographs but you are considering storing documents and some may contain personal information that you would like to keep secure and private, what steps can you take to ensure that this happens?". Below the text is a list of radio button options: "Encrypt files yourself*", "Share settings", "Leave it to your cloud service provider", and "Click here to enter text for a new choice!". Each option has a "Feedback" link. A text input field for the answer is visible, containing the text: "Encrypt files is the correct answer. The first question to ask is what kind of information is the personal information:". To the right of the editor is a "Question Properties" panel with options: "Enable multi-select", "Randomize choices when presented", "Use Existing Answer Set", and "Frequency Likert Scale" (set to a dropdown menu). There are also checkboxes for "Required" and "Help Message" (with a text input field), and a "Tag" field (with a text input field). The bottom of the editor shows "Remaining space: 486 MB".



BACKGROUND

DESIGN GOALS

PRIOR WORK

NEW USER EXPERIENCE

USER RESEARCH

OPPORTUNITIES

LOOKING AHEAD

JOIN THE CONVERSATION

Description

- Representative, potential end-user authors
- Representative tasks around the new UI
- One-on-one sessions
- Think-aloud protocol

Measured

- Task times, completion rates, errors
- Expectation and experience ratings
- System usability scale
- Post task informal interviews and debriefing

Goals

- Establish baselines
- Forge relationships
- Gain perspective
- Gather feedback
- Identify unique requirements

1. Set up the first screen a learner will see in a lesson
2. Edit the content of a text screen
3. Specify two concepts for a lesson
4. Add an image from your computer to the lesson
5. Add a three item survey to the lesson
6. Add slide show content to the lesson
7. Add lesson material to the adaptive component of the lesson
8. Make a copy of an existing course



BACKGROUND

DESIGN GOALS

PRIOR WORK

NEW USER EXPERIENCE

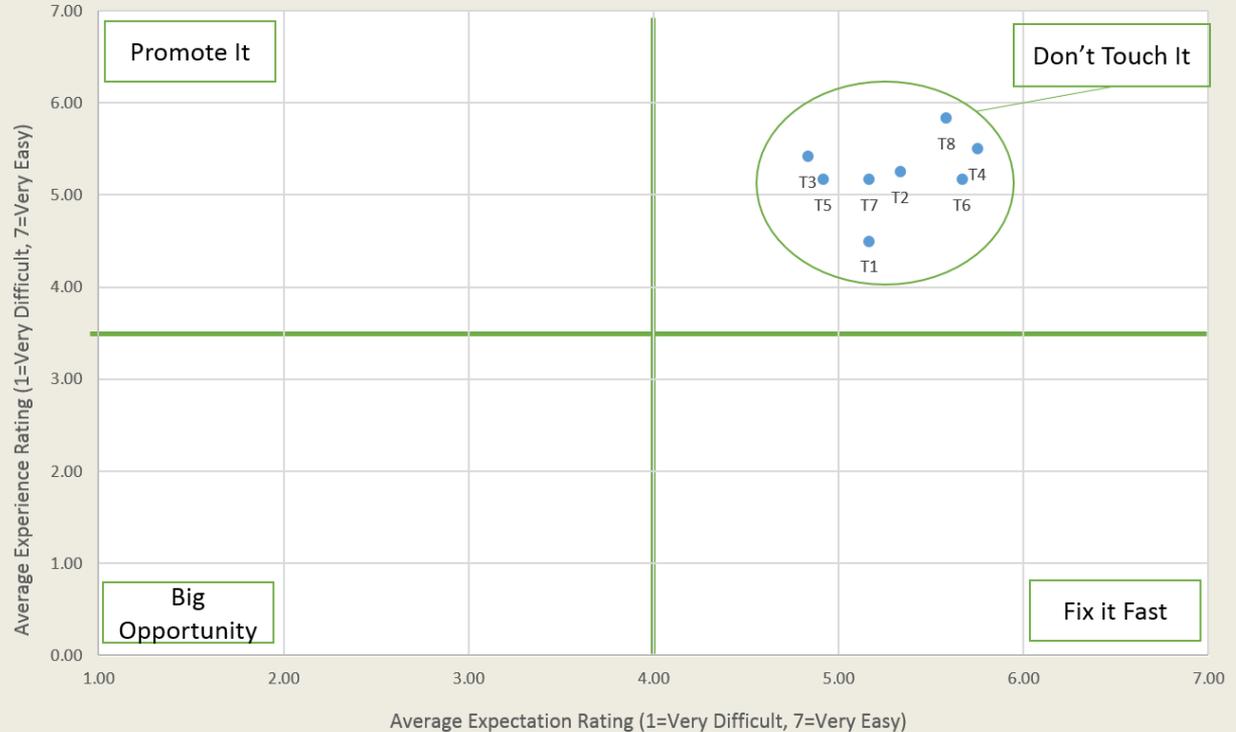
USER RESEARCH

OPPORTUNITIES

LOOKING AHEAD

JOIN THE CONVERSATION

Average Expectation x Experience Ratings





BACKGROUND

DESIGN GOALS

PRIOR WORK

NEW USER EXPERIENCE

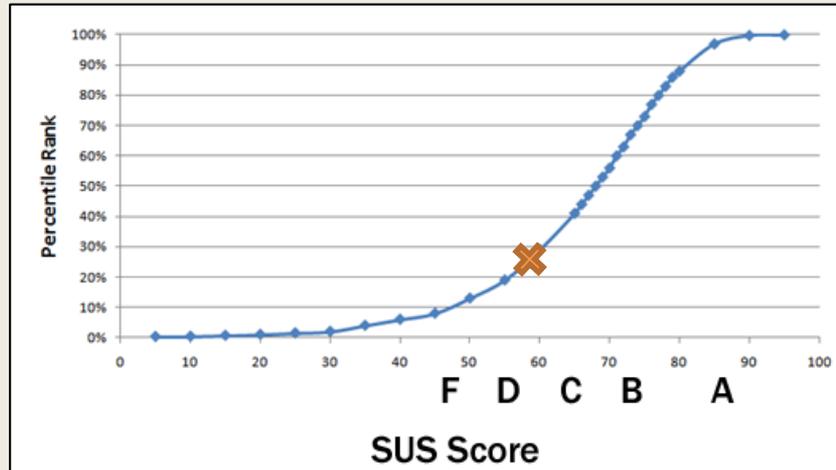
USER RESEARCH

OPPORTUNITIES

LOOKING AHEAD

JOIN THE CONVERSATION

Average System Usability Scale Result



SUS Overall Average Score (out of 100)

58.75

Percentile Rank

~ 29%, "D"

Usable Subscale

57.89

Learnable Subscale

61.81



BACKGROUND

DESIGN GOALS

PRIOR WORK

NEW USER EXPERIENCE

USER RESEARCH

OPPORTUNITIES

LOOKING AHEAD

JOIN THE CONVERSATION

Initial Conclusions and Discussion

- Individual tasks selected for the research were found to be relatively easy, with little preparatory material
- The system, overall, however has room for improvement
- Features not tested in this research included: media management, survey import, and course preview (to name a few)
- Confirmed in debriefing interviews with participants

[BACKGROUND](#)[DESIGN GOALS](#)[PRIOR WORK](#)[NEW USER EXPERIENCE](#)[USER RESEARCH](#)**[OPPORTUNITIES](#)**[LOOKING AHEAD](#)[JOIN THE CONVERSATION](#)

Related Work and Research

- Analyze time on task, errors, post-task discussions
- Turn findings into features
- Cultivate an Authoring UX beyond interfaces (e.g., wizards, “killer apps”, tutorial videos, F2F training sessions)
- Ongoing user research with other representative groups
- Leverage cloud for a more rapid deployment of fixes and features



BACKGROUND

DESIGN GOALS

PRIOR WORK

NEW USER EXPERIENCE

USER RESEARCH

OPPORTUNITIES

LOOKING AHEAD

JOIN THE CONVERSATION

On the Horizon

- Automated scenario generation
 - Produce multiple viable versions from a single scenario
 - Ranked by automation, refined and supervised by humans
 - Reduces development time
 - Varied scenarios for learner “practice”
- Content independent adaptive features within GIFT
 - Example: Game inspired interaction design
- Personalization of learning content
 - Based on data contained within learner profile
 - Includes learner preferences or social / demographic information



BACKGROUND

DESIGN GOALS

PRIOR WORK

NEW USER EXPERIENCE

USER RESEARCH

OPPORTUNITIES

LOOKING AHEAD

JOIN THE CONVERSATION

How to connect with GIFT

- <https://gifttutoring.org>
 - Forums
 - Documentation
 - Issue Tracker
 - News
- Develop and share with the community
- Author and share with the community
- GIFT Summer Camp
- GIFT Video Series (coming soon)





Acknowledgment

The research described herein has been sponsored by the U.S. Army Research Laboratory.

The statements and opinions expressed in this presentation do not necessarily reflect the position or the policy of the United States Government, and no official endorsement should be inferred.