Redesigning Large-Enrollment Online Course STA 2023-Statistical Methods I

Using Personalized Adaptive Learning Pathways

Team Members

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CA: Hayden Hampton, Roger Delgado, Rachael Becker, and multiple CAs from CDL.

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Goals for the Project

- Improve Success Rate: Develop PAL course contents and assessment tools for an online section of STA 2023 (Statistical Methods I) utilizing Realizit platform for course delivery to improve success rate.

- No Textbook option: Develop course contents based on open educational resources and materials (Students will not be required to buy any textbook).

- Comparison: Compare students' performances between PAL and non-PAL options.

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Project Description

- Overview
- Breakdown
- Impact
- Timeline

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Project Overview

- STA 2023 is the first of three Statistical Methods courses offered by our department, and identified as a high DFW course by COS. Recognizing the need for innovative teaching methods to improve student success rates, the project team proposes the development and delivery of the PAL contents for an online section of STA 2023 using Realizit.

- The project aims to utilize Realizeit platform to enhance accessibility, engagement, and learning outcomes via contents with examples, and assessments via variablized/formula question banks/stores of T/F, multiple choice, and enter answer questions.

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Course Breakdown

- Faculty Member : Dr. Nizam Uddin
- Course: STA 2023 - Statistical Methods I
- Course Modality: Fully Online
- Technology Applied: RealizIt that offers
  - Interactive lesson features to create engaging learning experiences.
  - Provide students with a variety of assessment tools.
  - Instant feedback mechanism to provide students hints and solutions.
- Course Contents are divided into Eight Modules and developed using open educational resources and materials (no textbook required).

Project Impact

- **Student Success:** The online format allows students to learn at their own pace and on their own schedule, accommodating varying learning styles and preferences.
- Save Money: This online section will not require any textbook (students save money), and replaces MyLab by practice and assessment tools in Realizeit. (CDL charges a small fee)
- Other Impact: The availability of this PAL section aligns with UCF's commitment to innovation in teaching and learning.

Project Timeline

Proposed to develop the course in eight modules by the end of Spring, 2024, and offer the developed course in Summer 2024. Completed all eight modules as proposed as follows:

- ✓Summer 2023: Developed the first two modules of this course in summer 2023 and delivered them in fall 2023 (as proposed).
- ✓Fall 2023: Developed three more modules in fall 2023 and delivered in spring 2024
- ✓Spring 2024: The final three modules are developed in Spring 2024. We now have completed our PAL section, and all eight modules will be delivered in Summer C, 2024 (as proposed).

Note: We broke each module into multiple short lessons with interactive work examples and plenty of variablized questions in question banks/stores. We will add more questions and examples as we go and revise contents based on feedback.

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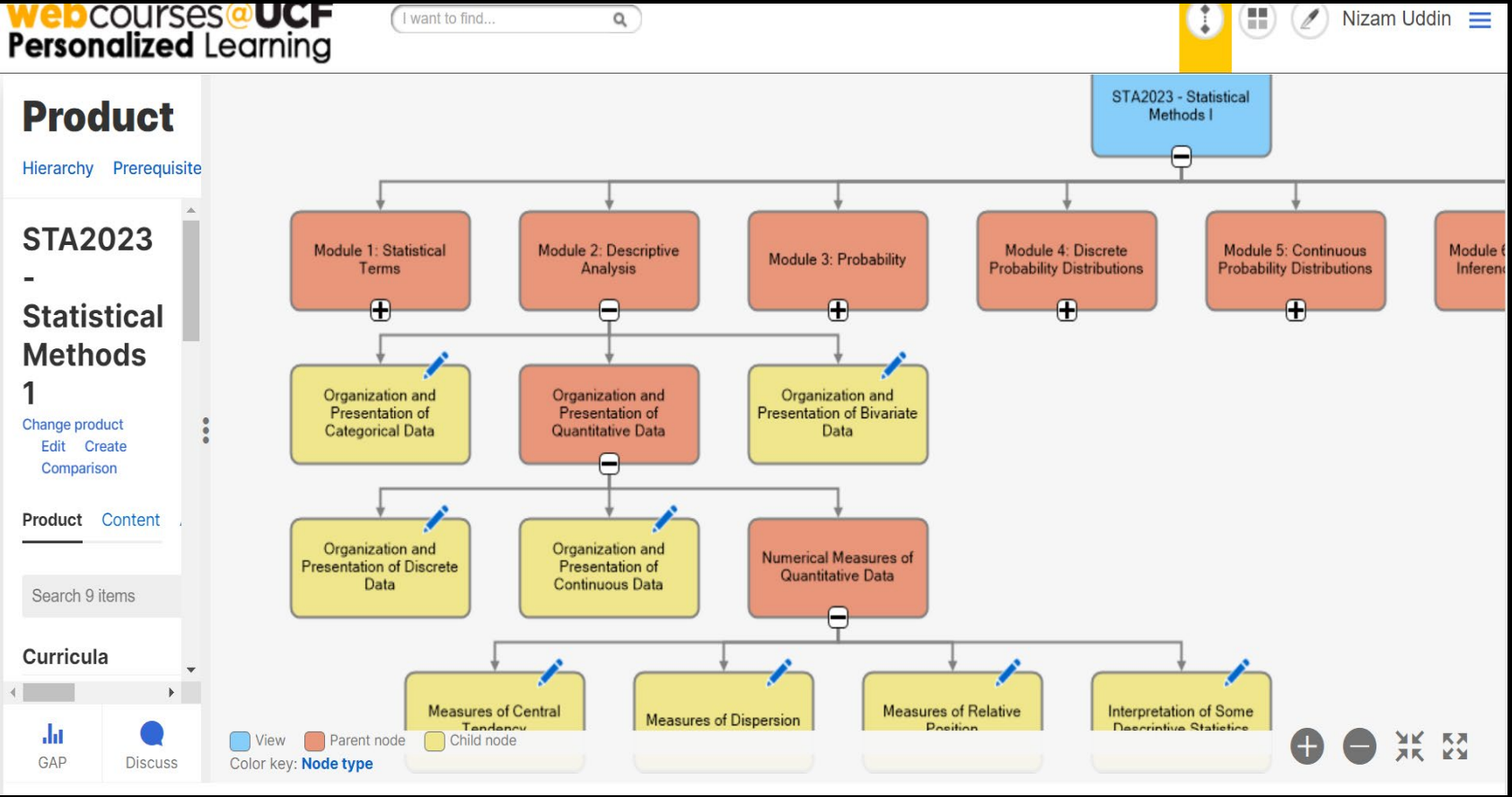
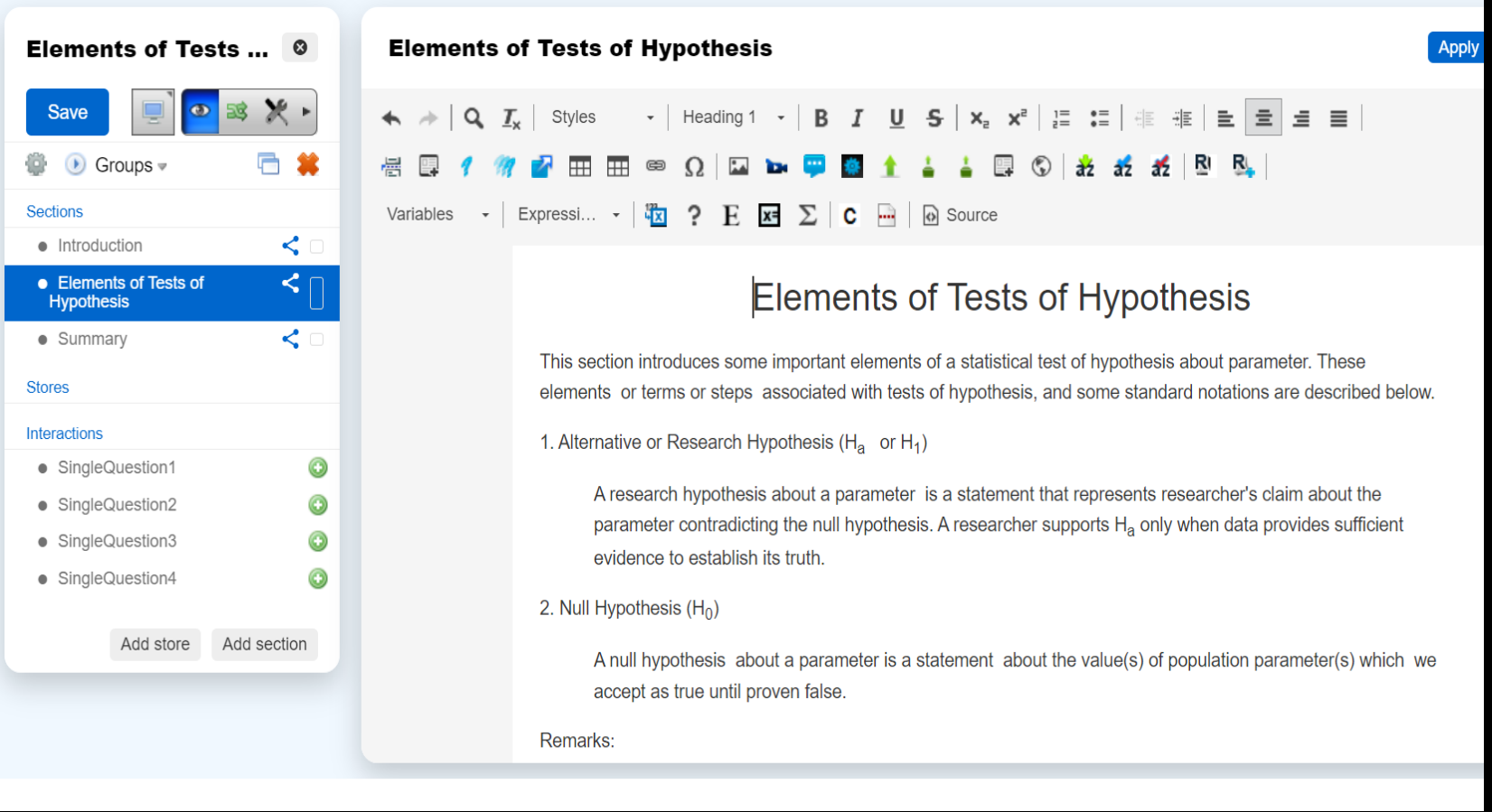
Supporting Details

Screenshots of the Course in RealizIt



Supporting Details

Screenshots of one sub-modie



Supporting Details

Num	Question
1	If a six member ethics committee is chosen at random from 20 state representatives of which x are Republicans and the remaining members are Democrats, what is the probability that the committee will have an equal number of Republicans and Democrats? Enter your answer using two digits after the decimal, use standard rounding rule (e.g., enter 0.251 as 0.25, enter 0.256 as 0.26, etc.).
2	In the US, x % of all adults have high blood pressure (Event A), y % have high cholesterol (event B), and z % have both risk factors (i.e., event A and B). What is the probability that a randomly selected adult has at least one of these two risk factors? Enter your answer using two digits after the decimal, use standard rounding rule (e.g., enter 0.251 as 0.25, enter 0.256 as 0.26, etc.).

- With the variablized questions, students would get different versions of the problems, or the same student would get different versions each time they practice.

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Project Highlights

✓ Course contents include plots, charts, tables, examples, and practice questions.

✓Quizzes include variety of questions (T/F, multiple choice, multiple answer, enter answer, matching questions).

✓Used data and examples from open educational resources.

✓Gradually released developed modules to students.

✓Project is completed within the proposed time-line.

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Evaluation Plans/Results

Evaluations based on first five modules

Spring 2023	Spring 2024
The course was offered fully online in Spring 2023, the five PAL modules were not available to students.	The course was offered fully online in Spring 2024, the five PAL modules were available to students.
# of students = 325 C or better grades: Test #1(73.53%), Test #2 (58.77%)	# of students = 124 (used PAL modules) C or better grades: Test #1(79.84%), Test #2 (60.5%) # of students = 252 (did not use PAL modules) C or better grades: Test #1(68.6%), Test #2 (59.52%)

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Thank you!
Questions?
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