

Interactive Self-Assessment Tool to Enhance Forest Biometrics Learning Capacity

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Introduction

An interactive assessment tool was developed in an introductory statistics course (FRST 231 DE) at UBC on an open-source platform (UBC Wiki) to provide students an opportunity to build the capacity to apply statistical methodologies using real-life datasets. We prepared worked-out examples using the Rapid OER grant with detailed explanations of the procedure that allowed students to apply their learned techniques and self-evaluate themselves.

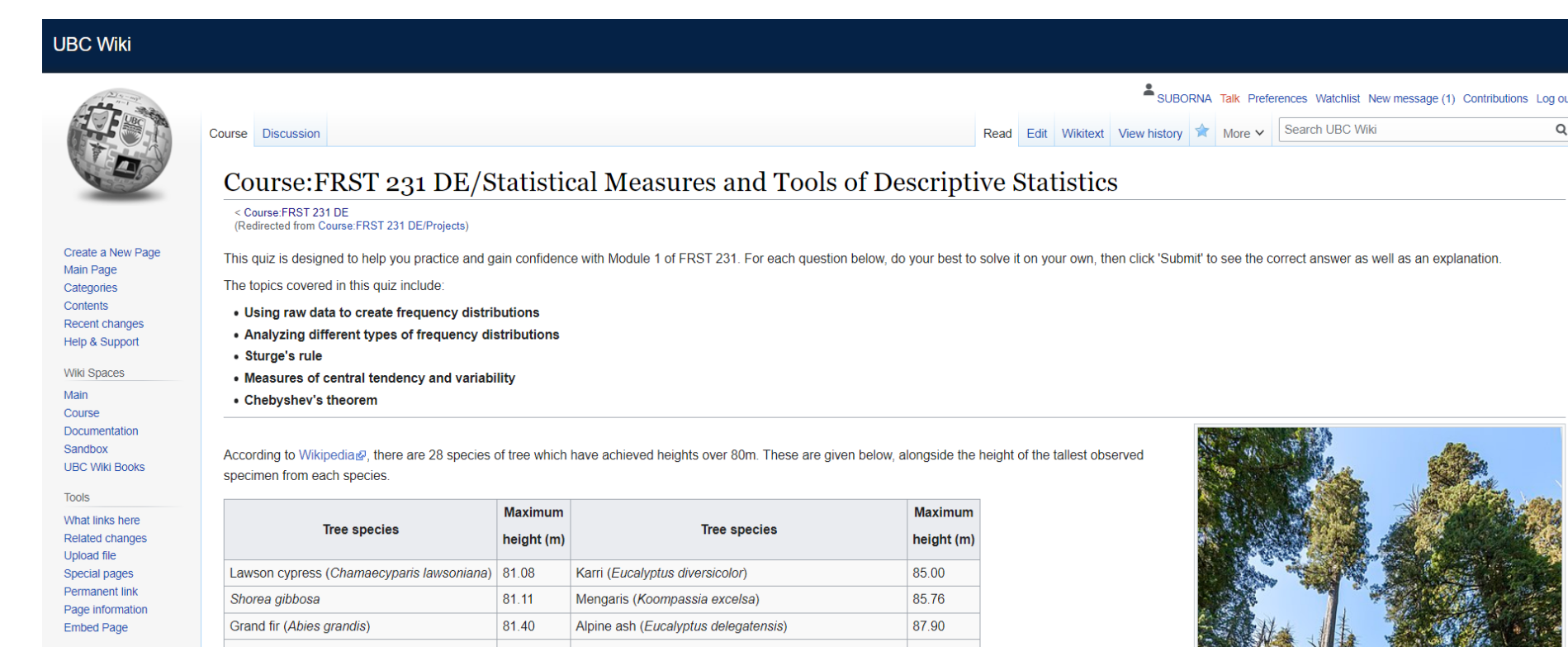
Project's Goals and Overall Objectives

- Create high-quality forest biometrics statistical resources on UBC Wiki.
- Enhance students' learning capacity and confidence in applying statistical methods independently.
- Evaluate the effectiveness of the OER materials for both students and teaching staff.

Interactive Open Access Self-Assessment Tool

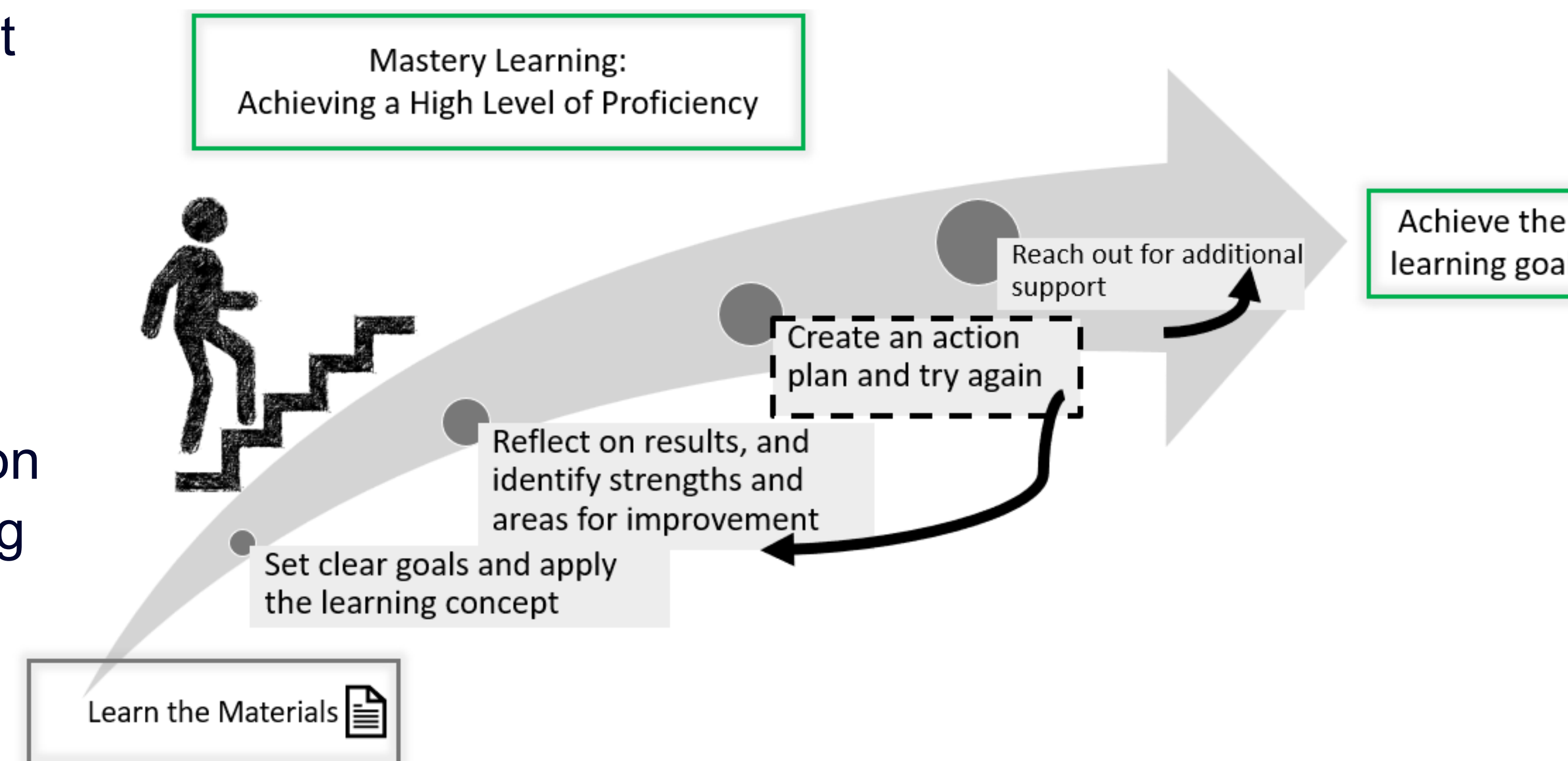
Developed a tool on [UBC Wiki](#) for two modules:

- Lesson 1: Statistical Measures and Tools of Descriptive Statistics
- Lesson 2: Rules of Probability



Self-Assessment and Pedagogy

Utilizing self-assessment and the principles of mastery learning pedagogical approach, the project aims to empower students with the tools for self-reflection and personal goal setting to achieve proficiency in statistical methods.



Research Objectives

- Measure changes in confidence and experience in learning modules.
- Trends for the Mastery of content knowledge.
- Identify patterns and themes of responses.

Comparative modules

Two modules (Lesson 3 and Lesson 4) were used in the survey to compare where self-assessment tool was not developed.

Evaluation Strategies

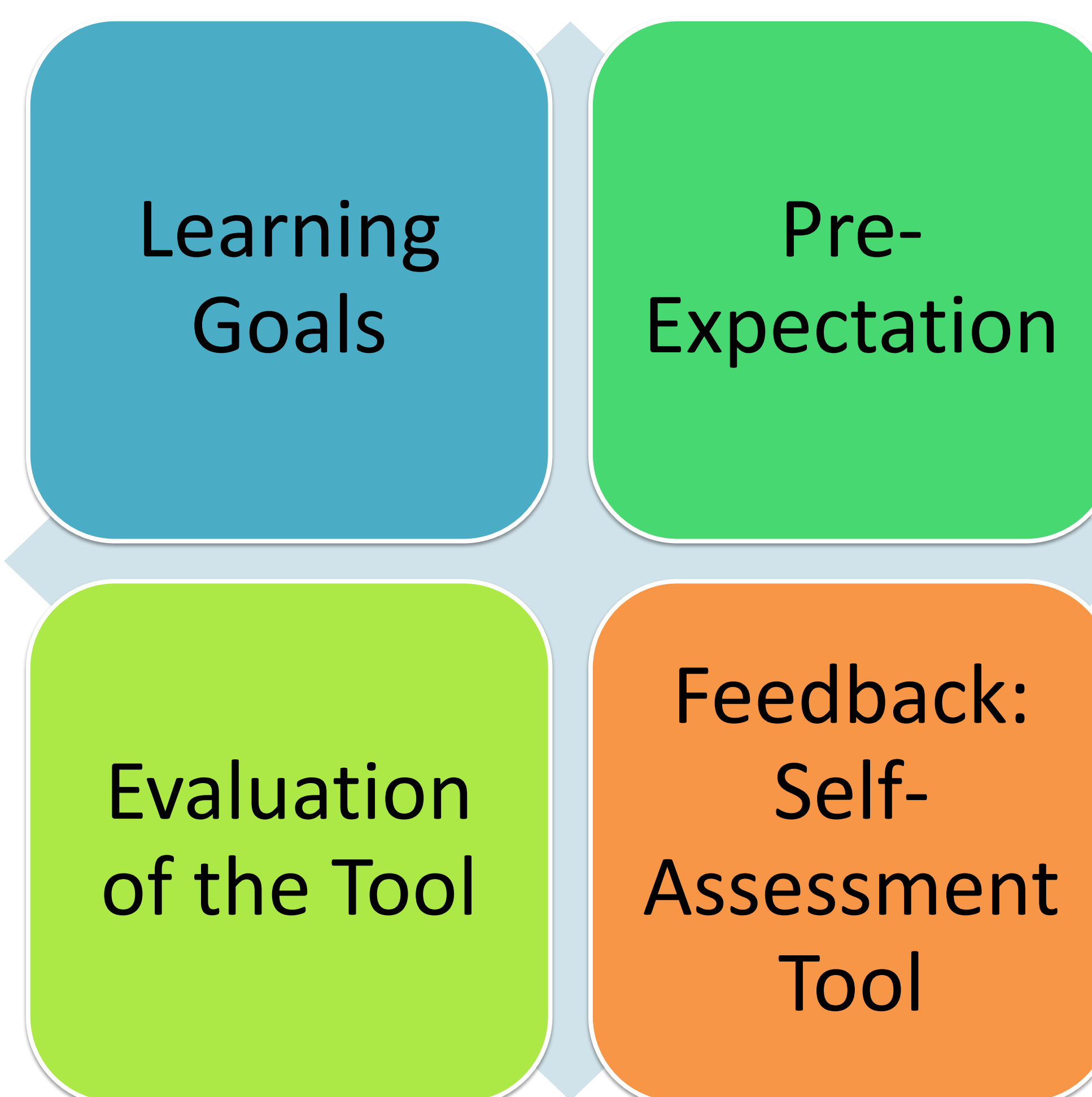
Two stage surveys were collected:

1. Beginning of the term to collect learning goals, expectations, and prior experience.
2. Middle of the term for self-efficacy, confidence in applying independently, mastery gained, and meeting the learning goals

Text Analysis

Systematic exploration was performed for the textual data to identify trends, and make data-driven decisions. For the text analysis we used the qualitative data from the survey questions in four areas.

Categories of Questions:



Research Summary

- Post experience and confidence level improved significantly where self-assessment tools were available.
- The level of prior knowledge and the year of study were linked to acquiring expertise and developing confidence in applying methods.
- Students' feedback revealed a greater reliance on the self-assessment tool to gain mastery.

Impact and Sharing Plan

- The OER resources were created on the UBC Wiki platform and distributed to students enrolled in the course and other classes.
- The findings of the research were showcased at a national scale conference to disseminate to education scholars at various Canadian institutions.

References

- Ahmed, S.S. 2022. Self Assessment Tool on Statistical Measures and Tools of Descriptive Statistics and Rules of Probability. UBC Wiki. Main Page: [Link](#), Module 1: [Link](#), and Module 2: [Link](#).

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- Material development team: Spencer Shields
- Evaluation team: Zexi Liu

