

The Research Paper Toolbox

Executive Summary

The Research Toolbox is an eight-part course and information resource for IIT humanities graduate students who need to write research papers and/or write about original research. After completing the course, students should be able to develop scholarly research from idea to professionally formatted deliverable; adhere to best practices in gathering, synthesizing, and presenting information; and utilize tools and organizational strategies to maximize the efficiency of their work. Given students' diverse backgrounds, academic assignments, and professional goals, the sequence of these course objectives is topical and designed to be flexible. The course employs a guided discovery instructional strategy so that students can focus on the areas in which they need the most improvement when they have the time and immediate need without requiring one-on-one instructor guidance.

The eight lessons, each of which can stand alone, include Choose a Research Topic, Perform Realistic Research, Format Research Data, Manage References, Use a Style Guide, Lay Out Your Paper, Change Your Paper's Modality, and Apply to Professional Journals.

The Choose a Research Topic lesson uses a free exploratory discovery strategy to enable students to identify the main areas of research in Technical Communication and related disciplines, use the best sources to find recent and seminal literature in these areas, identify worthwhile research problems in a given domain, and translate a research problem into a testable claim about the world. The sequencing of these objectives is flexible to accommodate varying experience levels, although novice researchers will likely take the chronological approach.

The Perform Realistic Research lesson is designed to teach students to determine which sources both fit a project's scope and are academically valid, use academic search tools to find relevant information, develop an awareness of Technical Communication scholarly literature, create a research timeline, and obtain resources from other libraries. The lesson employs part-to-whole sequencing of objectives and inductive exposition to impart strategies for research that are compatible with a high-pressure academic research schedule.

The Format Research Data lesson uses intrinsically programmed discovery to teach students to format raw research data in Excel for efficient analysis, run basic descriptive statistics in Excel, and prepare the data for statistical analysis in the software package PASW. Step-by-step sequencing is employed to take students through the steps of formatting and analyzing data while providing an explanation of the procedure throughout.

The Manage References lesson uses an expositive strategy to teach students why managing references is important, what Zotero is and why it is useful, and how to use Zotero to organize and cite sources. Whole-to-part sequencing is used to provide a brief overview of Zotero's features, and step-by-step sequencing shows students how to use these features.

The Use a Style Guide lesson employs general-to-specific sequencing to familiarize students with the kind of information found in style guides and to teach them how to use a style guide to create clear and consistent scholarly and professional documents. Through this lesson's discovery instructional strategies, students acquire the means to further explore on their own any aspects of style guides as necessary.

The Lay Out Your Paper lesson enables learners to create and format a basic LaTeX document and to understand enough of the mechanics of LaTeX to explore more complex functionalities on their own with the aid of referenced sources. The lesson employs a free exploratory discovery strategy in which a topical sequencing of functionalities teaches the what, why, and how of LaTeX commands.

The Change Your Paper's Modality lesson enables students to determine what content is appropriate for each of six communication mediums and to translate research material into each medium. The lesson's free exploratory discovery strategy and topical sequencing of objectives expose students to the main principles of converting their research to various modes.

Finally, the Apply to Professional Journals lesson employs topical sequencing of objectives to enable students to submit a research paper to peer-reviewed academic journals and to find and prepare for an academic conference. Through a free exploratory discovery instructional strategy, students objectify the professional goals of the lesson then restructure activities associated with writing and formatting a research paper to attain those objectives.