Title: Levels of Exploration in Exploratory Testing: From Freestyle to Fully Scripted

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Goal:
To assess the impact of varying levels of exploratory testing on student learning outcomes and testing effectiveness within a higher education software engineering course.

Research Questions:

- How does the level of exploratory testing influence students' ability to identify critical software defects?
- Does the degree of exploration affect student engagement and their perceived learning during testing tasks?

Methodology:
A controlled experiment will be conducted with undergraduate software engineering students, divided into three groups. Each group will use a different level of exploratory testing (Freestyle, Medium, Fully Scripted) during practical lab sessions. All students will test the same software application using test charters tailored to their assigned level of exploration. Engagement and perceived learning will be assessed through pre- and post-test surveys. Defects identified during testing will be logged and categorized based on severity.

Metrics:

- Quantity and severity of defects discovered
- Time taken per defect
- Pre- and post-activity surveys measuring engagement and perceived learning (using a Likert scale)
- Qualitative reflections provided by students on their testing experience
- Evaluation of students' test reports for depth and clarity

Would you like help formatting this into a formal research proposal or presentation?