North Carolina State University
INFORMED CONSENT FORM for RESEARCH

Title of Study: Improving Software Testing Education through Lightweight Explicit Testing Strategies and Feedback (#24796)
Principal Investigator: Rui Bai
Faculty Sponsor: Kathryn Stolee

What are some general things you should know about research studies?
You are being asked to take part in a research study. Your participation in this study is voluntary. You have the right to be a part of this study, to choose not to participate or to stop participating at any time without penalty.

You are not guaranteed any personal benefits from being in a study. Research studies also may pose risks to those who participate. In this consent form you will find specific details about the research in which you are being asked to participate. If you do not understand something in this form, it is your right to ask the researcher for clarification or more information. A copy of this consent form will be provided to you upon request. If at any time you have questions about your participation, do not hesitate to contact the researcher(s) named above or the NC State IRB office as noted below.

What is the purpose of this study?
The purpose of the study is to learn if a lightweight testing checklist with explicit testing strategies improve students' testing outcomes.

Am I eligible to be a participant in this study?
In order to be a participant in this study you must be enrolled in CSC217 at North Carolina State University. You cannot participate in this study twice.

What will happen if you take part in the study?
You will be working on CSC217 lab assignments 6-11 as usual. When you are assigned to the experimental group, you will be provided with a testing checklist with explicit testing strategies as additional supportive materials when working on either CSC217 lab assignments 6-8 or CSC217 lab assignments 9-11. Students in the control group will not receive the testing checklist. Each student will be in the experimental group for three assignments and the control group for three assignments.

If you consent to participate in this study, you will be instructed to fill out team surveys that ask for your feedback after the completion of each lab assignment 6-11, and individual surveys after labs 8 and 11, totaling 8 surveys (6 as a team, 2 as an individual). Each survey takes 2 to 5 minutes to complete. In individual surveys, you will be invited to a short interview (15-20min) with the researchers to share your experience using the checklist and improve its design. This optional interview will be conducted online via Zoom (link will be provided later), and the conversation will be recorded to assist data analysis.

We will also evaluate the effectiveness of the testing checklist by measuring the quality of your submissions to labs 6-11. All data, including the lab assignment submissions, survey responses, and the audio recordings of the optional interview, will be anonymized and only accessible to the researchers in this study.

Risks and Benefits
There are minimal risks associated with participation in this research. There are no direct benefits to your participation in the research other than practice with unit testing and programming. As for indirect benefits, we hope that this research will lead to better educational practices for college students in Computer Science.

Confidentiality
The information in the study records will be kept confidential to the full extent allowed by law. Data will be stored securely on an NCSU Google Drive, and only accessible to the researchers in this study. We will collect participants' Unity IDs to match the lab sections, lab assignment submissions, and the survey responses. As soon as the matching is done, we will anonymize the data by removing Unity IDs and renaming the data with GroupID-#. No reference will be made in oral or written reports which could link you to the study.

Compensation
For participating in this study you will receive no compensation.

What if you are a NCSU student?
Participation in this study is not a course requirement and your participation or lack thereof, will not affect your class standing or grades at NC State.

What if you have questions about this study?
If you have questions at any time about the study itself or the procedures implemented in this study, you may contact the researchers: Gina Bai at rbai2@ncsu.edu or 336-775-8921, Kathryn Stolee at ktstolee@ncsu.edu or 919-513-3305.

What if you have questions about your rights as a research participant?
If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact the NC State IRB Office via email at irb-director@ncsu.edu or via phone at 919-515-4514. You can also find out more information about research, why you would or would not want to be in research, questions to ask as a research participant, and more information about your rights by going to this website: http:go/ncsu.edu/research-participant.

Consent To Participate
"I have read and understand the above information. I have received a copy of this form. I agree to participate in this study with the understanding that I may choose not to participate or to stop participating at any time without penalty or loss of benefits to which I am otherwise entitled."

Do you consent to be a part of the research and allow us to use the information from this survey as data? If yes, select "yes" below; if no, select "no" below.

○ Yes

○ No

What's your Unity ID (e.g., rbai2)?

_____

Lab Section & Lab Repo (e.g., csc217-LL-200-1)

_____

How often did you consult the checklist… (circle the option)

during system testing	Never	Rarely	Sometimes	Often	Always
during unit testing	Never	Rarely	Sometimes	Often	Always
when discussing test design with your teammates	Never	Rarely	Sometimes	Often	Always

How would you rate this checklist in terms of helpfulness… (circle the option)

during system testing	Extremely helpful	Very helpful	Moderately helpful	Slightly helpful	Not at all helpful
during unit testing	Extremely helpful	Very helpful	Moderately helpful	Slightly helpful	Not at all helpful
during group discussion	Extremely helpful	Very helpful	Moderately helpful	Slightly helpful	Not at all helpful

Do you have any suggestions on how to make the checklist more useful? Or do you have any other comments about the checklist?

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