

Informed Consent to Participate in Research Involving Minimal Risk

Information

Information to Consider Before Taking Part in this Research Study

Title: NSF 2013271: Transforming the Flipped Classroom through Adaptive Learning and Student Data Analytics

Study # STUDY000691

Overview

You are being asked to take part in a research study. The information in this document should help you to decide if you would like to participate. The sections in this Overview provide the basic information about the study. More detailed information is provided in the remainder of the document.

Study Staff: This study is being led by Autar Kaw who is a Professor of Mechanical Engineering at University of South Florida. This person is called the Principal Investigator. Other approved research staff may act on behalf of the Principal Investigator.

Study Details: This study is being conducted at University of South Florida and is supported/sponsored by the National Science Foundation. The purpose of the study is to investigate the effect of teaching Computational Methods in a flipped classroom format with adaptive learning lessons on student performance and student satisfaction. The expected duration of the study is the current semester you are enrolled in the course.

Subjects: You are being asked to take part because you are a student in the Computational Methods course. Flipped classrooms have been found to improve student performance over traditional lecture in several meta studies. One of the ways to possibly improve the flipped classroom is to use adaptive learning and we want to see how this helps your learning.

Voluntary Participation: Your participation is voluntary. You do not have to participate and may stop your participation at any time. There will be no penalties or loss of benefits or opportunities if you do not participate or decide to stop once you start. You will receive 2 extra credit points for the overall grade for participating in the study. To earn the same extra 2-credit points, an alternative assignment would be to write a 500-word essay on topics of numerical methods that is agreed upon mutually by the instructor and participant. Your decision to participate or not to participate will not affect your student status, course grade, recommendations, or access to future courses or training opportunities.

Benefits, Compensation, and Risk: We do not know if you will receive any benefit from your participation. However, there is good chance that your performance in the course will improve. There is no cost to participate. You will be compensated a gift card worth \$30 if you are participate in a focus group. This research is considered minimal risk. Minimal risk means that study risks are the same as the risks you face in daily life.

Confidentiality: Even if we publish the findings from this study, we will keep your study information private and confidential. Anyone with the authority to look at your records must keep them confidential.

Why are you being asked to take part?

You are being asked to take part because you are a student in the Computational Methods course. Flipped classrooms have been found to improve student performance over traditional lecture in several meta studies. One of the ways to possibly improve the flipped classroom is to use adaptive learning

and we want to see how this helps your learning. Your participation will improve current and future offerings of the course.

Study Procedures

If you take part in this study, the following items are transparent to you as a student. As part of the EML3041 course, all students registered for the class are given a concept test in the end of the semester, take online quizzes and lessons, and take a final examination. As part of the study, learning metrics such as responses/scores/time/proficiency level/readiness on the tests, online quizzes and examinations will be recorded. We will obtain demographic data such as age, gender, transfer status and course grades in the Programming, Calculus I, II, III and ODE courses from you and verify it with the transcript data available in the department. We are requesting you to allow us to use this demographic data.

Race, ethnicity, Pell grant recipient, gender, age, grades or AP scores of pre-requisite courses, cumulative GPA, major, academic level, transfer status, number of credit hours, and hours worked at a job per week data will be self-reported and you can decline to answer any of these questions. Once the test/quiz/exam and demographic data are aligned (i.e. put in the same row in an excel sheet), all the data are de-identified - meaning your names and U numbers are removed. Only then the data are sent for evaluation.

You will be also taking 3 surveys managed directly by our evaluator at University of Pittsburgh. A copy of these 3 surveys are under Modules in CANVAS for you to preview. The evaluator will provide me only with non-identifiable codes of participants who have completed the surveys. You will need to give me this code so that I can post the extra credit and for aligning the quiz/test/exam data with it. I will receive the data of the two anonymous surveys without any codes and the demographic survey with codes after the final grades have been posted. This data is received for use in future studies.

Volunteers will be sought for focus groups. The focus groups are limited to 20 students per semester from the USF course of EML3041 Computational Methods and hence would be chosen randomly if we get more than 20 volunteers. A compensation of \$30 per participant will be given to focus group participants. The compensation will be made in forms as allowed per university rules. The focus groups will be conducted by the external evaluator or her representative from University of Pittsburgh via an online conference system such as Adobe Connect, phone conference line, or in person without my presence. Only typed aggregated data may be shared with the instructor for improving the course. The reports and papers written on the results of the study are conveyed on the aggregated data and never on individual data.

The data collected would potentially be used for future studies.

If you want to participate in this study, or the alternative assignment, or not participate, please go to CANVAS and choose your option by taking the survey called “Informed Consent Participation Survey – Opt In, Opt Out, Alternative Assignment”.

Total Number of Subjects

About 450 individuals will take part in this study at USF. A total of 850 individuals will participate in the study at all sites.

Alternatives / Voluntary Participation / Withdrawal

You have the alternative to choose not to participate in this research study. To earn the extra 2-credit points, an alternative assignment would be to write a 500-word essay on topics of numerical methods

that are agreed upon mutually by the instructor and participant. The notice to do the alternative will have to be given at the same time when students are required to submit the informed consent form. The deadlines for submitting the essay will be the final day of classes.

You should only take part in this study if you want to volunteer. You should not feel that there is any pressure to take part in the study. You are free to participate in this research or withdraw at any time. There will be no penalty or loss of benefits you are entitled to receive if you stop taking part in this study.

Your decision to participate or not to participate will not affect your student status, course grade, recommendations, or access to future courses or training opportunities.

Benefits

The potential benefits of participating in this research study include improving student performance in the course.

Risks or Discomfort

This research is considered to be minimal risk. That means that the risks associated with this study are the same as what you face every day. There are no known additional risks to those who take part in this study.

Compensation

I will not pay you for the time you volunteer while being in this study except if you are in a focus group. You will receive 2 extra credit points for the overall grade for participating in the study. For focus group participants, a payment of \$30 per student will be made. Only 20 students will be selected for the focus group.

Costs

It will not cost you anything to take part in the study. The fee for using the adaptive lessons for the whole course for every student (participating or not) is paid by the grant.

Conflict of Interest Statement

There is no conflict of interest

Confidentiality

We will do our best to keep your records private and confidential. We cannot guarantee absolute confidentiality. Your personal information may be disclosed if required by law. Certain people may need to see your study records. These individuals include:

- The research team, including the Principal Investigator, CoPrincipal Investigators, and all other research staff.
- Certain government and university people who need to know more about the study. For example, individuals who provide oversight on this study may need to look at your records. This is done to make sure that we are doing the study in the right way. They also need to make sure that we are protecting your rights and your safety.
- Any agency of the federal, state, or local government that regulates this research. This includes the National Science Foundation

- The USF Institutional Review Board (IRB) and its related staff who have oversight responsibilities for this study, and staff in USF Research Integrity and Compliance.

Your identifiers might be removed from your private records or your samples. Your information or samples could be used and/or distributed to another investigator for future research studies without additional consent from you or your Legally Authorized Representative

We may publish what we learn from this study. If we do, we will not include your name. We will not publish anything that would let people know who you are.

If completing an online survey, it is possible, although unlikely, that unauthorized individuals could gain access to your responses. Confidentiality will be maintained to the degree permitted by the technology used. No guarantees can be made regarding the interception of data sent via the Internet. However, your participation in this online survey involves risks similar to a person's everyday use of the Internet. If you complete and submit an anonymous survey and later request your data be withdrawn, this may or may not be possible as the researcher may be unable to extract anonymous data from the database.

Please be advised that although the researchers will take every precaution to maintain confidentiality of the data, the nature of focus groups prevents the researchers from guaranteeing confidentiality. The researchers would like to remind you to respect the privacy of your fellow subjects and not repeat what is said in the focus group to others.

What if new information becomes available about the study?

During the course of this study, we may find more information that could be important to you. This includes information that, once learned, might cause you to change your mind about being in this study. We will notify you as soon as possible if such information becomes available.

You can get the answers to your questions, concerns, or complaints.

If you have any questions, concerns or complaints about this study, call Autar Kaw at 813-974-5626. You may also call this number if you experience an unanticipated problem related to the research. If you have questions about your rights, complaints, or issues as a person taking part in this study, call the USF IRB at (813) 974-5638 or contact by email at RSCH-IRB@usf.edu.

Consent to Take Part in this Research Study

It is up to you to decide whether you want to take part in this study. Please click one of the buttons below.

☐ I freely give my consent to take part in this study. I understand that I will be asked to complete the surveys, and allow my demographic data to be aligned with my test/online lessons/final exam responses. With this, I agree to participate in the study.

☐ I choose to take the alternative assignment of writing essays to earn extra credit.

☐ I do not agree to take part in the study.

It is up to you to decide whether you want to take part in the focus groups. You can opt out of this choice at any time. The two focus groups per semester are limited to 10 students each. Please click one of the buttons below.

☐ I choose to participate in focus group.

☐ I choose to not participate in focus group