

Title: *Optimize Student Learning through Personalized Instruction and Need-aware Gaming (PING)*

PI: Ying (Gina) Tang



Electrical and Computer Engineering

**KEY INFORMATION AND CONSENT TO TAKE PART IN A RESEARCH STUDY
ADULT CONSENT FORM FOR SOCIAL AND BEHAVIORAL RESEARCH**

TITLE OF STUDY: Optimize Student Learning through Personalized Instruction and Need-aware Gaming (PING)

Principal Investigator: Ying Tang

You are being asked to take part in a research study. This consent form is part of an informed consent process for a research study and it will provide key information that will help you decide whether you wish to volunteer for this research study.

Please carefully read the key information provided in questions 1-9 and 16 below. The purpose behind those questions is to provide clear information about the purpose of the study, study specific information about what will happen in the course of the study, what are the anticipated risks and benefits, and what alternatives are available to you if you do not wish to participate in this research study.

The study team will explain the study to you and they will answer any question you might have before volunteering to take part in this study. It is important that you take your time to make your decision. You may take this consent form with you to ask a family member or anyone else before agreeing to participate in the study.

If you have questions at any time during the research study, you should feel free to ask the study team and should expect to be given answers that you completely understand.

After all of your questions have been answered, if you still wish to take part in the study, you will be asked to sign this informed consent form.

You are not giving up any of your legal rights by volunteering for this research study or by signing this consent form.

After all of your questions have been answered, if you still wish to take part in the study, you will be asked to sign this informed consent form.

The Principal Investigator, Ying (Gina) Tang, or another member of the study team will also be asked to sign this informed consent.

1. What is the purpose of the study?

The primary objective of this project is to develop a new learning game that implements project-based learning in a game environment that provides timely, personalized, contextual, cognitive, and metacognitive feedback and guidance to students. As we develop this game, we are interested in understanding how students solve engineering problems, what feedback and supports they need as they work on these problems, and how effective a game is at providing this feedback.

2. Why have you been asked to take part in this study?

You are being asked to participate in this study because you are a student in Introduction to Digital Systems/Computer Architecture this semester, where the game is being developed and tested.

3. What will you be asked to do if you take part in this research study?

If you agree to participate in this study, you will be randomly assigned to participate in the game or participate in a lab on the same concept. Both groups will be asked to complete a survey with information about you as a student and your level of self-esteem, interest, and sense of belonging in engineering at Rowan University.

If you are assigned to the game group, you will also be video recorded to allow the research team to observe the game process and how you interacted with the system. Following the game or lab, you may also be asked to complete an interview with the research team to talk about your experience with the game.

Once you have completed the game or lab activity, you will be presented with an engineering task to solve related to the concept from the game and lab. You will be asked to discuss your problem-solving approach and what steps you took to complete the problem.

4. Who may take part in this research study? And who may not?

All students in Introduction to Digital Systems at Rowan University and in Computer Architecture at Mercy College are eligible to participate in this study. Students who are not taking the course or who leave the course before the lab with the game component will not be included in the study.

5. How long will the study take and where will the research study be conducted?

Participation in the game or lab activity will take place during the normal class session in your lab classroom. The surveys will be administered in the classroom time as well and will not require time outside of class. If you are invited to participate in an interview about your experience with the game, this will be scheduled outside of class time as fits your schedule and will take place in an office or conference room on campus at Rowan University in the College of Engineering. The interview will take no more than one hour to complete.

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6. How many visits may take to complete the study?

Most participants will only participate in one visit, to complete the surveys and lab or game activities during class. Students invited to participate in an interview after the game session will participate in a second visit of no more than one hour.

7. What are the risks and/or discomforts you might experience if you take part in this study?

There are no expected risks or discomforts associated with participation in this project.

8. Are there any benefits for you if you choose to take part in this research study?

There may be no direct benefit for you in participating in this study, though completing the game or lab activities may increase your understanding of engineering concepts. To thank our participants for their participation, a random drawing of a gift card worth \$25 will be completed for each participating class, and all participants will have a chance to receive this gift card. The research team may benefit from the study by learning more about learning in engineering labs and using games to improve education practice.

9. What are the alternatives if you do not wish to participate in the study?

Your alternative is not to participate in the study, and you will be able to complete your course with the normal activities provided by your instructor.

10. How many subjects will be enrolled in the study?

We will seek to enroll approximately 60 students per year from Rowan University in this study.

11. How will you know if new information is learned that may affect whether you are willing to stay in this research study?

During the course of the study, you will be updated about any new information that may affect whether you are willing to continue taking part in the study. If new information is learned that may affect you, you will be contacted.

12. Will there be any cost to you to take part in this study?

There is no financial cost for you to participate in this study. The only cost could be of your time to participate in a one-hour interview, if requested.

13. Will you be paid to take part in this study?

You will not be paid for your participation in this research study. To thank our participants for their participation, a random drawing of a gift card worth \$25 will be completed for each participating class, and all participants will have a chance to receive this gift card.

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14. Are you providing any identifiable private information as part of this research study?

We are collecting identifiable private information in this research study. After collecting your identifiable private information, we may remove the identifiers, and after such removal, we may use your information for future research studies or we may distribute the de-identified information to another researcher for future studies without additional consent from you.

15. How will information about you be kept private or confidential?

All efforts will be made to keep your personal information in your research record confidential, but total confidentiality cannot be guaranteed. Your personal information may be given out, if required by law. Presentations and publications to the public and at scientific conferences and meetings will not use your name and other personal information. All study records will be stored and maintained by the principal investigator and only the primary research team will have access to identifiers for participants.

16. What will happen if you do not wish to take part in the study or if you later decide not to stay in the study?

Participation in this study is voluntary. You may choose not to participate or you may change your mind at any time.

If you do not want to enter the study or decide to stop participating, your relationship with the study staff will not change, and you may do so without penalty and without loss of benefits to which you are otherwise entitled.

You may also withdraw your consent for the use of data already collected about you, but you must do this in writing to Ying (Gina) Tang, Electrical and Computer Engineering Department, Rowan University, 201 Mullica Hill Rd., Glassboro, NJ 08028, tang@rowan.edu

If you decide to withdraw from the study for any reason, you may be asked to participate in one meeting with the Principal Investigator.

17. Who can you call if you have any questions?

If you have any questions about taking part in this study or if you feel you may have suffered a research related injury, you can call the Principal Investigator:

*Ying (Gina) Tang,
Electrical and Computer Engineering
Rowan University
856-256-5339*

If you have any questions about your rights as a research subject, you can call:

Office of Research Compliance
(856) 256-4078– Glassboro/CMSRU

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18. What are your rights if you decide to take part in this research study?

You have the right to ask questions about any part of the study at any time. You should not sign this form unless you have had a chance to ask questions and have been given answers to all of your questions.

AGREEMENT TO PARTICIPATE

I have read the entire information about the research study, research risks, benefits and the alternatives, or it has been read to me, and I believe that I understand what has been discussed.

All of my questions about this form or this study have been answered and I agree to volunteer to participate in the study.

Subject Name: _____

Subject Signature: _____ Date: _____

Signature of Investigator/Individual Obtaining Consent:

To the best of my ability, I have explained and discussed the full contents of the study including all of the information contained in this consent form. All questions of the research subject and those of his/her parent or legal guardian have been accurately answered.

Investigator/Person Obtaining Consent: _____

Signature: _____ Date _____

**ROWAN UNIVERSITY INSTITUTIONAL REVIEW BOARD
AUDIO/VIDEOTAPE ADDENDUM TO CONSENT FORM**

We are asking for your permission to allow us to video and audiotape you as part of that research study. You do not have to agree to be recorded in order to participate in the main part of the study.

The recording(s) will be used for analysis by the research team, to understand how you interacted with the engineering learning game. You will have an opportunity to review the recording and talk with the research team about your thoughts and feelings as you interacted with the game.

The recording(s) will include full facial pictures and will be associated with your personal identifier in the project so we can connect the video results to your survey responses.

The recording(s) will be stored at Rowan University on the primary investigators computer in a protected and secure folder. After the study is completed and all results publications have been published, the videos will be destroyed.

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Your signature on this form grants the investigator named above permission to record you as described above during participation in the above-referenced study. The investigator will not use the recording(s) for any other reason than that/those stated in the consent form without your written permission.

AGREEMENT TO PARTICIPATE

I have read the entire information about the research study, research risks, benefits and the alternatives, or it has been read to me, and I believe that I understand what has been discussed.

All of my questions about this form or this study have been answered and I agree to volunteer to participate in the study.

Subject Name: _____

Subject Signature: _____ Date: _____

Signature of Investigator/Individual Obtaining Consent:

To the best of my ability, I have explained and discussed the full contents of the study including all of the information contained in this consent form. All questions of the research subject and those of his/her parent or legal guardian have been accurately answered.

Investigator/Person Obtaining Consent: _____

Signature: _____ Date _____

RESERVED FOR IRB APPROVAL STAMP
DO NOT REMOVE
Creation/Revision Date: 01/31/2019

Rowan University
Pro2019000516
Approved on 11-25-2020