

Consent

Investigating Online Learning Environments Informed Consent

Description of the Study and Your Part in It

Dr. Shulan Lu (shulan.lu@tamuc.edu) is inviting you to take part in a research study. The purpose of this research is to understand what instructional method in online learning environments best support student learning.

You will answer questions about how you learn, attend to a lecture, answer questions that assess your understanding and relevant background knowledge. Last you will also answer questions about demographics.

It will take 45 minutes to 1 hour for you to complete the study.

Choosing to Be in the Study

You do not have to be in this study. Participation is voluntary. You may choose not to take part and you may choose to stop taking part at any time without penalty. You will not be punished in any way if you decide not to be in the study or to stop taking part in the study.

Risks and Discomforts

There are minimal risks to participating in this research; however, these do not pose any more risk than those a person would experience in everyday life.

Possible Benefits

You will gain knowledge on theory of learning and contribute to the body knowledge on learning and instruction.

Incentives

You will receive the following reimbursement: 1 Psych credit for each half hour completed. Note that the same course/extracredit is available for a non-research activity that involves the same effort and time investment. Please see your instructor for a description of the alternative assignment.

Protection of Privacy and Confidentiality

We will do everything we can to protect your privacy and confidentiality. We will not tell anybody outside of the research team that you were in this study or what information we collected about you in particular. Only our research team will have access to the confidential data. Data will be stored on a password-protected computers until all names are deleted. Identifiable data will be kept confidential on team's password-protected computers and deleted within six years following completion of the study.

To advance the openness and transparency of science, the anonymous data will also be kept at Open Science Framework <https://osf.io/> and used accordingly.

Contact Information

If you have any questions or concerns about this study or if any problems arise, please contact the researchers at...

Dr. Shulan Lu

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If you have any questions or concerns about your rights in this research study, please contact the IRB Chair:

Dr. Lucy Pickering
Chair, Institutional Review Board (IRB)
Department of Literature and Languages
Texas A&M University-Commerce
Commerce, TX 75429-3011
irb@tamuc.edu

Informed Consent Agreement

By beginning the survey, you acknowledge that you are at least 18 years old, have read this consent form, have understood the above information, and agree to voluntarily participate in this research. If you would like a copy of this form for your reference, you may print this out.

- I agree to participate.
- I DO NOT agree to participate.

OSIQ items

This is a questionnaire about the way you think. Please, read the following statements and rate each of them on a 5-point scale. Circle '5' to indicate that you absolutely agree that the statement describes you, and circle '1' to indicate that you totally disagree with the statement. Circle '3' if you not sure, but try to make a choice. It is very important that you answer all the items in the

I was very good in 3D geometry as a student.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

I have difficulty expressing myself in writing.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

If I were asked to select between engineering professions and visual arts, I would prefer engineering.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

My verbal skills would make a career in language arts relatively easy for me.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

Architecture interests me more than painting.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

My mental images are very colorful and bright.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

I prefer schematic diagrams and sketches when reading a textbook instead of colorful and pictorial illustrations.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

I tell jokes and stories better than most people.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

It is difficult for me to write essays and I do not enjoy doing it at all.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

My mental images are more like schematic representations of things and events rather than like detailed pictures.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

When reading fiction, I usually form a clear and detailed mental picture of a scene or room that has been described.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

If I were asked to choose among engineering professions, or visual arts, I would choose visual arts.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

I have a photographic memory.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

I can easily imagine and mentally rotate three-dimensional geometric figures.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

I enjoy pictures with bright colors and unusual shapes like the ones in modern art.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

My verbal skills are excellent.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

When thinking about an abstract concept (or building), I imagine an abstract schematic building in my mind or its blueprint rather than a specific concrete building.

1 Totally disagree

(2)

3 Not sure

(4)

5 Absolutely agree

When entering a familiar store to get a specific item, I can easily picture the exact location of the target item, the shelf it stands on, how it is arranged and the surrounding articles.

1 Totally disagree

(2)

3 Not sure

(4)

5 Absolutely agree

Putting together furniture (e.g. a TV stand or a chair) is much easier for me when I have detailed verbal instructions than when I only have a diagram or picture.

1 Totally disagree

(2)

3 Not sure

(4)

5 Absolutely agree

My mental images are very vivid and photographic.

1 Totally disagree

(2)

3 Not sure

(4)

5 Absolutely agree

When explaining something, I would rather give verbal explanations than make drawings or sketches.

1 Totally disagree

(2)

3 Not sure

(4)

5 Absolutely agree

If someone were to give me two-digit numbers to add (example 43 and 32), I would simply do the adding without visualizing the numbers.

1 Totally disagree

2

3 Not sure

4

5 Absolutely agree

My mental images of different objects very much resemble the size, shape, and color of actual objects that I have seen.

1 Totally disagree

2

3 Not sure

4

5 Absolutely agree

I usually do not try to visualize or sketch diagrams when reading a textbook.

1 Totally disagree

2

3 Not sure

4

5 Absolutely agree

I normally do not experience many spontaneous vivid images; I use my mental imagery mostly when attempting to solve some problems like the ones in mathematics.

1 Totally disagree

2

3 Not sure

4

5 Absolutely agree

When I imagine the face of a friend, I have a perfectly clear and bright image.

1 Totally disagree

2

3 Not sure

4

5 Absolutely agree

I have excellent abilities in technical graphics.

1 Totally disagree

(2)

3 Not sure

(4)

5 Absolutely agree

When remembering a scene, I use verbal descriptions rather than mental pictures.

1 Totally disagree

(2)

3 Not sure

(4)

5 Absolutely agree

I can easily remember a great deal of visual details that someone else might never notice. For example, I would just automatically take some things in, like what color is a shirt someone wears or what color are his/her shoes.

1 Totally disagree

(2)

3 Not sure

(4)

5 Absolutely agree

I can easily sketch a blueprint for a building I am familiar with.

Definitely false

Probably false

Neither true nor false

Probably true

Definitely true

In school, I didn't have problems with geometry.

1 Totally disagree

(2)

3 Not sure

(4)

5 Absolutely agree

I am good in playing spatial games involving constructing from blocks and paper (e.g. Lego, Tetris, Origami).

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

Sometimes my images are so vivid and persistent that it is difficult to ignore them.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

I can close my eyes and easily picture a scene that I have experienced.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

I have better than average fluency in using words.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

I would rather have a verbal description of an object or person than a picture.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

I am always aware of sentence structure.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

My mental images are more schematic than colorful and pictorial.

1 Totally disagree	<input type="radio"/>	2	<input type="radio"/>	3 Not sure	<input type="radio"/>	4	<input type="radio"/>	5 Absolutely agree
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I enjoy rephrasing my thoughts in many ways for variety's sake in both writing and speaking.

1 Totally disagree	<input type="radio"/>	2	<input type="radio"/>	3 Not sure	<input type="radio"/>	4	<input type="radio"/>	5 Absolutely agree
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I remember everything visually. I can recall what people wore to a dinner and I can talk about the way they sat and the way they looked probably in more detail than I could discuss what they said.

1 Totally disagree	<input type="radio"/>	2	<input type="radio"/>	3 Not sure	<input type="radio"/>	4	<input type="radio"/>	5 Absolutely agree
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I sometimes have a problem articulating exactly what I want to say.

1 Totally disagree	<input type="radio"/>	2	<input type="radio"/>	3 Not sure	<input type="radio"/>	4	<input type="radio"/>	5 Absolutely agree
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I find it difficult to imagine how a three-dimensional geometric figure would exactly look like when rotated.

1 Totally disagree	<input type="radio"/>	2	<input type="radio"/>	3 Not sure	<input type="radio"/>	4	<input type="radio"/>	5 Absolutely agree
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My visual images are in my head all the time. They are just right there.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

My graphic abilities would make a career in architecture relatively easy for me.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

When I hear a radio announcer or a DJ I've never actually seen, I usually find myself picturing what they might look like.

1 Totally disagree 2 3 Not sure 4 5 Absolutely agree

Text Lecture

You are doing great! How do we form good, bad habits or even strange quirks? How can we break old habits? Now you will be able to find out through a lecture.

Keep in mind that we aim to study what instructional method supports student learning most in online environments. It is critical that you **pay attention to the lecture**. If your mind wanders, **just refocus**.

Please take notes as you typically do when taking an online lecture attentively.
Are you ready?

- Yes, I'm ready.
- No, I'm NOT ready.

Contiguity 1 Narration



Conceptual Image Lecture

You are doing great! How do we form good, bad habits or even strange quirks? How can we break old habits? Now you will be able to find out through a lecture.

Keep in mind that we aim to study what instructional method supports student learning most in online environments. It is critical that you **pay attention to the lecture**. If your mind wanders, **just refocus**.

Please take notes as you typically do when taking an online lecture attentively.
Are you ready?

- Yes, I'm ready.
- No, I'm NOT ready.

Contiguity 2 Narration



Image Lecture

You are doing great! How do we form good, bad habits or even strange quirks? How can we break old habits? Now you will be able to find out through a lecture.

Keep in mind that we aim to study what instructional method supports student learning most in online environments. It is critical that you **pay attention to the lecture**. If your mind wanders, **just refocus**.

Please take notes as you typically do when taking an online lecture attentively.
Are you ready?

- Yes, I'm ready.
- No, I'm NOT ready.

Contiguity 3 Narration



Metacog

To help researchers know what is going on, please answer the following questions.

There is no right or wrong. Simply report as it is.

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I was able to pay attention to the lecture.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My mind wandered frequently.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I did not do other tasks during the lecture.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you were to take a test on the lecture you just attended to, how many multiple choice questions out of 10 would you answer correctly on the test?

How long would you like to study and get ready for a multiple choice test on your learning comprehension?
Answer _____ minutes.

Comprehension

Who proposed the contiguity theory of learning?

- Guthrie
- Hull
- Skinner
- Watson

The contiguity theory argued that reward affects learning because it _____.

- changes the context
- produces pleasure
- reduces a drive
- reduces frustration

I want my dog to bark constantly every time it is outside (just to annoy the neighbors). According to the contiguity theory of learning, which method of reward will work?

- Give the dog a treat after he barks
- Praise the dog while it is outside barking
- Smack the dog on the nose if he does not bark
- Take the dog in the house immediately before he finishes barking

According to the contiguity theory of learning, physical punishment can backfire if _____.

- it is inconsistent.
- it is too harsh.
- the behavior being punished is aggression or fear.
- the punishment satisfies a drive for attention.

You catch the cat eating food off the table. You pick the cat up. The cat hates this. It claws your face, it bites you, it pees on you. You put the cat down and go change your clothes.

According to the contiguity theory of learning, what will the cat do next time you catch it on the table?

- Bite you.
- Eat from its cat dish.
- Jump on the table.
- Pee.

Which of the following is NOT part of contiguity theory of learning?

- We may need practice to ensure that we do not forget what we learned.
- We may need practice to notice which cues are important.
- We may need to learn several stimulus-response associations if the task is complex
- The stimulus and response must occur together to be learned.

Bob punishes his dog for barking by yelling at her. What Bob doesn't realize is that his dog's natural response to loud noises is to bark back at them. The contiguity theory would argue that the reason Bob's punishment is not working is because?

- The dog enjoys being yelled out.
- Bob is inconsistent in his use of punishment.
- The dog's natural response to the punishment is consistent with the behavior being punished.
- Punishment takes multiple attempts before it is effective.

Which of the following is NOT an example of the contiguity view of learning?

- People associate the stop sign with pressing the brake pedal.
- Baseball players associate particular wrist band with hitting home runs.
- Students associate a particular study technique with good grades.
- A child takes a chocolate bar from the Halloween candy basket as soon as he organizes his toys.

June sits at her favorite chair, draws a picture, plays some video game, then studies. Afterwards, her parents let her play outside. What will she do next time when she sits at the chair according to the contiguity theory of learning?

- Draw pictures.
- Play video games.
- Study.
- All of the above.

June sits at her favorite chair, draws a picture, plays video game, then studies at her favorite chair. Which of the following things parents do would keep June from forming the habit of studying at the chair?

- Let her drink Kool Aid while going out to play.
- Let her watch her anime in her favorite chair.
- Let her watch cable news in their back patio.
- Let her ride a bike with her dad.

While Tammy studies, the room must be very quiet. However, during the pandemic, her kids take online classes and do activities in their small apartment. To adapt to the situation, Tammy decides to play white noise in the background while she studies at night and increases the volume a little bit over time till she gets used to some noises in the background. Which of the methods does Tammy adopt according to the contiguity theory?

- Threshold method.
- Fatigue method.
- Incompatible method.
- SR association.

While John wants to quit smoking, he moves back to his mom's house where his mom would not let anyone smoke in the house. He also signs up for evening classes at TAMUC, which has a tobacco free campus policy. Which of the methods does John use in breaking the old habit?

- Threshold method.
- Fatigue method.
- Incompatible method.
- Punishment.

Based on the latest research on the effects of reward size as discussed during the lecture, which of the following would be most effective in getting June to form the exercise habits?

- Enjoy a healthy delicious dinner with family after exercising.
- Go to the gym immediately after work and do not stop and socialize.
- Go to Yellowstone National Park next summer if she sticks to her workout all year.
- Enjoy watching movies after exercising.

The wife complains to her therapist that her husband tosses the coat on the bed after he gets home. On a hundred occasions, the wife insists that he hangs up the coat. What would her therapist suggest her to do based on the contiguity theory?

- Praise the husband after he hangs up the coat.
- Ask the husband to put the coat on, go to the vegetable garden, return to the house and hang up the coat when returning.
- Give the husband a bottle of beer after he hangs up the coat.
- Give the husband a hug when he gets home.

To condition Little Albert to be afraid of the white rats, the appearance of white rats was always accompanied by loud noise at the beginning. The loud noise is a (an) _____ .

- unconditioned stimulus.
- natural response.
- conditioned stimulus.
- punishment.

Advertisement of cars often use very sexy actor as their spokesperson. This is an example of _____ behavioral learning.

- contiguity
- classical
- operant
- evolutionary

To get your cat not to stay on the plushy couch, you give a treat to your cat and pet the cat gently whenever the cat follows your instruction and get off the couch. This is an example of _____ behavioral learning.

- Contiguity
- Classical
- Positive reinforcement
- Positive punishment

Demographics

What is your gender?

- Man
- Woman
- Other (please specify)

Type your age in years (e.g., 24):

Pick the category below that best describes your ethnic/racial background. I consider myself to be...

- White /European American
- Black / African American
- Native American / American Indian
- Asian /South Pacific Islander
- Hispanic/Latino/Latina/Latinx
- Arab/Middle Eastern
- Central Asian /Indian /Pakistani
- Biracial/Multiracial
- Other

Have you taken PSY 341 Learning Theory and Process?

- Yes
- No

Have you heard of the contiguity theory of learning prior to today's lecture?

- Yes
- No

Debriefing

Debriefing

This study examines whether and how students of varying learning style preference could benefit from imagery used in instruction and monitor their learning progress.

Please do not tell other students about the hypotheses we are investigating in this study—for that might influence their responses and it is people's natural responses to beliefs about what others think that we are interested in. Thank you.

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Thank you for your contribution to science and advancement of student learning!

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