

# **Field Study Report**

Improving Participation in Online Learning Classes

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## **Goal and Context**

The primary purpose of this field study is to observe the in-class participation of college students worldwide that are taking online classes to answer the design question: How to improve and increase students' interactions in online learning classes on teleconference platforms (such as Zoom)?

Statistics have shown that fifty-four percent of students were dissatisfied with their online course. The highest reported reason for dissatisfaction was lack of teacher and peer interaction. This data proves that interaction in online activities is associated with student satisfaction. Besides, Fifty-five percent of instructors said more than half of their students have not been tuning in to remote classes[2]. Lack of interactions in class will cause a bad quality of education. Both the instructors and the students would feel the awkwardness. To avoid dissatisfaction and awkwardness for a better quality of the teaching environment, it is necessary to improve students' overall interactions in their online classes.

The field study was structured to observe some of the methods or tools instructors use to interact with students, every time the participants participate in class, and any possible reasons in the background or surroundings that might prevent them from participating. The following are some key research questions for this field study (see Appendix 1 for all):

- What are the ways do instructors ask students to interact with others in an online learning environment? And which way do students prefer the most?
- When do students talk the most during a class?
- How often do instructors ask the students to participate in class?
- What happens in the background of the students when the instructors ask for participation?

The first two questions focus on the different methods for students to interact with the class and see which method students like the most. This figures out which method students feel more comfortable using than others. The third question identifies whether the instructor asks for too much participation. The last question identifies some possible background reasons for not participating. Overall, the goal field study is to figure out possible reasons students are not participating and develop possible recommendations for design solutions that can improve students' interactions.

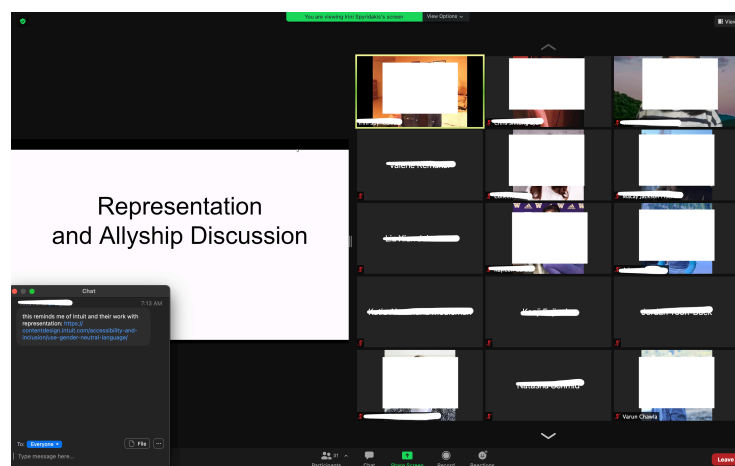
## **Methods**

This field study was conducted using the structured observation method, under nine focus areas, to record observations throughout the study. Using these nine focus areas, the observation notes would be taken with full details of how students are participating in class. Also, the overall structure of the notes would be well organized and easy to analyze.

This field study participants were university students who are currently experiencing online learning to analyze the problem better. Participants were selected because they all had online classes in the past week, and specifically, the same participants that attended two different class sessions were selected for better data comparison among different classes.

All observations were conducted via a teleconference platform called Zoom, where students at the University of Washington use for online classes. As shown in Fig.1, the platform interface was separated into two parts. The left part is the shared screen, and the right part is all the participants. Each box on the right represents a student in the class, and the arrow button on the top and bottom of the interface can see more students. Whenever someone talks, the box becomes bordered by green. The menu bar on the bottom of the interface shows some common tools for a typical online session. A pop window of chat is located at the bottom left corner. The interface is set up like this because this allowed observing multiple factors simultaneously instead of jumping back and forth between pages.

This field study contains two main observation sessions representing two classes. Observations in this field study specifically focused on the following nine focus areas: built environment, overall experience, tools and technology, food and drink, possessions, media consumption, demographics, information and communication access, and traffic. These areas of focus were selected because they were relevant to the context of students' participation. The most critical focus areas are tools and technology and information and communication access, which is for recording the methods of participating and participants' interaction with the class. In contrast, the other focus areas were for possible reasons that prevent students from participating. Each focus area was planned with questions for data collection (Appendix 1). The data was collected by filling observations into a field notes outline, which has space planned for each focus area (Appendix 1). This outline allows quicker and more precise data collection in a short amount of time. After three sessions, the data shows nine students who took all these three class sessions and participated in at least one session. The data were cleaned up after each session by re-sorting and labeling different participants within each session to differentiate the observations by participants (Appendix 2). Lastly, after the three class sessions, the data was analyzed and organized the observations into an affinity diagram (Appendix 3). The affinity map identifies the similarities in data and possible recommendations to improve and increase online classes' interactions.



*Fig. 1 Zoom interface and observation screen*

## **Results**

The field study was conducted with many challenges because most of the students had their cameras off for the entire class. Even though few observations were made, the study still shows some patterns of why students are not participating in online classes. By observing and analyzing the nine students' interactions with others, whether they turned their camera on, and some of their background information in three different online classes, the field study found out and conclude three possible reasons that prevent students from participating in class: class materials and overall class structure, objective factors, and personal interest.

### **Class Materials and Overall Class Structure**

The first reason that the students are not participating is the materials taught in class and how the class is structured. The students might get bored of the materials or simply listen to the instructor talking all the time. The field observations show that students were less likely to participating in class if they did not understand the instruction and course materials. If the materials are not clearly explained, students tended to get more frustrated with the confusion and could possibly decide not to participate in the class. A well designed class structure can bring up students' interest in learning the materials. Instead of frustration and confusion, students would be more likely to participate in the class with more interests. The comparison is made between session one and the other two sessions: class materials and class structure will affect class participation.

"The instructor talked for the entire first 90mins of class."

"Students mentioned they are confused on the instructions and ask their classmates in the breakout room."

"Student 3 mentioned he did not know what he was supposed to do and then muted himself for the rest of the breakout session."

"The instructor had to bring everybody back in the main session and give the students a more understandable explanation of the instruction and send them back in breakout rooms again."

"The instructor talked for the entire first 90mins of class, then gives a short break."

### **Objective Factors**

The field observation notes clearly show many objective factors that would possibly prevent class participation or make fewer interactions happen in class. These objective factors can include many areas such as technical issues, background, surroundings, etc. These factors are things the participants cannot control. Many things seemed too small to affect class interactions. No matter how big the matter is, students would be distracted by them. Once the students' attention is drawn away from the lecture, they would miss something in class. And sometimes, that might be a question the instructor just asked. So in many ways, surrounding objective factors will affect a student's class participation.

“Student 6 asked about the group worked again because he was looking at his phone for the past few minutes.”

“Student 7 mentioned he is living in different time zones and his family is sleeping, while he talked the class.”

“Student 6 typed in chat and mentioned internet lagging, and with the camera turned off for the entire session.”

### **Personal Interest**

Not like objective factors mentioned in the previous section, personal interest is very subjective. Many times, it is just about students’ feelings on something. Students might not participate can simply because they do not feel like doing it. Students might favor certain class features and start talking for a particular question or decide to hide under the camera and isolate themselves entirely from others. For example, based on the observation data, it shows that student 1 feels more comfortable in a larger group like session two than a relatively small discussion group like session 3. The student turned on the camera for the entire session two and participated in the class but decided to turn off the camera in session 3. Because of the current online courses trend, students need to start getting comfortable in all forms of class format, even though it is a subjective reason that is harder to control.

“Student 1 typed in chat, and the camera turned off for the entire session.

“Student 1 typed in chat and talked, with the camera turned on for the entire session.”

“Student 1 never participated, and the camera turned off for the entire session.”

### **Prioritization**

1. Class Materials and Overall Class Structure
2. Objective Factors
3. Personal Interest

Class materials and overall class structure is the number one priority firstly because relatively it can be changed and improved very easily. Secondly, online classes are forms of education, and the essence of education are the materials taught in class and how the materials are explained to the students, which is the class structure. Objective factors are prioritized second because once the class structure is planned well, the next thing to solve is to reduce the objective factors that might cause less interaction. Not all objective factors can be controlled but it’s necessary to at least reduce them. The last one and also the hardest one to solve is personal interest. This is almost impossible to to control. Students can only be suggested and mentored on some personal habit

## **Recommendations**

To address the issue caused by class materials and overall class structure, the instructors should plan ahead a well-structured class. All teachers plan ahead for what materials will be taught in the class, but not all teachers go through their plan a couple of times to see if the plan works out for students or if the materials can be explained clearly. It's easy for instructors because they know the materials very well, but students who learn them for the first time would be hard. So the recommendation for this is that instructors can go through the materials with the teaching assistants or other instructors in the apartments to see if they can understand the materials.

To address the issue caused by objective factors, such as background noises, family issues, technical issues, etc. Many of these things cannot be controlled by instructors and students. However, there should be some alternatives for the students to participate in class if certain things happen. For example, students can chat if they have a noisy background. Instructors can provide a little more break time for students to do whatever they need to do. Also, instructors can use other platforms, such as Slack, for students to participate. "All roads lead to Rome." There must be other ways to solve issues.

To address the issue caused by personal interest, the situation becomes a little more complicated. Many students prefer not to participate or choose to participate in a class, and the instructors should give them the freedom to choose. For example, Instructors cannot force students to turn on their cameras. However, this can be addressed in another way. One recommendation is to give extra credits to those who turned on their cameras. Students still have the choice, but now more students will start to turn on cameras because of the credit. Besides, some students might not like particular class structure, such as discussions or breakout rooms. Instructors can make them more comfortable by giving the students more freedom and no pressure.

## **Discussion & Reflection**

To understand these results of the possible reasons for lack of students' participation in online classes, it is essential to understand the overall online environment and think from a student's perspective. Try to understand a student's frustration when class materials are not explained well, and the class structure is not planned reasonably. It is also essential to cover all the surrounding objective factors that affect students' participation even though they seem like they do not. Furthermore, it is essential to understand that every student has different personal interests and feelings at different moments.

One of the most significant limitations of these results is that they are based on the observation notes. The data was collected only by observing, and for this particular topic, many students tended to turn off their cameras. Many details could not be discovered, and some results were only assumptions based on the data. There might be different reasons behind that.

On the other hand, one of this field study's strengths is that data is collected on the same participants but different online classes. So the data can be compared between different classes to

see some patterns showing why students did not participate in classes. These patterns can lead to results and reasonably reflect the reasons for the lack of interactions.

In the next field study, the observation will take place on more participants and classes from other departments to see if other factors would cause students not to participate. Also, the observation would be focused on those who turned on their cameras. In that way, the observation will be more detailed.

One thing that was surprising during this field study was that some students could be really active and passionate about the materials learning in a class, but others seemed like they didn't belong to the class at all. Students pay much tuition to achieve education, and many of them just do not care.

### **Next Steps**

As mentioned in the previous sections, the limitations of this field study will only make assumptions about students' feelings based on observations. Furthermore, with many cameras turned off, it was not easy. For the upcoming interview project, the primary purpose will be to figure out how students feel about participating in online classes and what factors affect the students' participation that weren't observed in this field study.

## Reference Cited

- [1] C. Turley and C. Graham, "Interaction, Student Satisfaction, and Teacher Time Investment in Online High School Courses," 2019. [Online]. Available: <https://files.eric.ed.gov/fulltext/EJ1229415.pdf>. [Accessed: 30-Jan-2021].
- [2] L. Fay, "More Than Half of Students Are Not Tuning In to Online Classes, Informal Teacher Survey Shows," The 74 More Than Half of Students Are Not Tuning In to Online Classes Informal Teacher Survey Shows Comments, 16-Apr-2020. [Online]. Available: <https://www.the74million.org/more-than-half-of-students-are-not-tuning-in-to-online-classes-informal-teacher-survey-shows/>. [Accessed: 29-Jan-2021].



## **Appendix 1. Planning materials**

### **Research Questions**

1. What are some current pain points of online participation and why?
2. What are the ways do instructors ask students to interact with others in an online learning environment? And which way do students prefer the most? Why?
3. How often do instructors ask the students to participate in class?
4. How is participation in an online classroom different from a physical classroom?
5. How often do students feel uncomfortable in an online class due to “awkward silence?”
6. When do students talk the most during a class?
7. How comfortable are students turning on their cameras?
8. Why do most students prefer not to turn on their cameras?
9. Why are students not likely to participate in online classes?
10. What happens in the background of the students when the instructors ask for participation?

### **Areas of Focus**

#### **Built Environment**

- What is the teleconference platform being used?
- What does the platform look like?
- How to see other participants in the class?
- Where do students take their classes?

#### **Overall Experience**

- Are there any awkward moments or silence happening throughout the class?
- What is the proportion of students participating in class?
- What is the proportion of students showing their faces in class?
- Do students have a great experience throughout the entire class?

#### **Tools and Technology**

- What are the tools that students can participate in class?
- Which tools do instructors/students most prefer to use?
- How is the internet speed throughout the class?

#### **Media consumption**

- Does using social media apps affect online class participation?

#### Possessions

- What do students have around them?
- Are the possessions for class purpose or other?

#### Demographics

- How many students are in the class?
- Is participation related to class size? Do small classes have more awkward silences?

#### Information and Communication Access

- Can students access all class information easily?
- Do instructors communicate with students clearly?
- When do students participate?

#### Food and Drinks

- Do students eat or drink while taking a class? If so, how often?
- Do eating and drink in class affect class interactions?

#### Family and Kids

- Are there family and kids in the background while taking a class? If so, do they make loud noise? Do they affect the students taking class?
- Do family and kids in the background affect class interaction?

## **Field Notes Outline**

**Date:**

**Time:**

**Class:**

**Participants:**

**Information and Communication Access**

**Food and Drinks**

**Build Environment**

**Possessions**

**Media consumption**

**Tools and technology**

**Demographics**

**Traffic**

**Overall Experience**

## **Appendix 2. Field notes & images**

### **Session 1 Field Study Notes**

**Date:** 1/19/21

**Class:** HCDE 301

**Participants that attend all three sessions:**

**Student 1, Student 2, Student 3 Student 4, Student 5, Student 6, Student 7, Student 8, Student 9**

### **Information and Communication Access**

- Student 1 typed in chat, with camera turned off for the entire session.
- Student 2 never participated, and with camera turned off for the entire session.
- Student 3 mentioned he didn't what was he supposed to do and then muted himself for the rest of the breakout session.
- Student 4 typed in chat, and with camera turned off for the entire session.
- Student 5 never participated, and with camera turned off for the entire session.
- Student 6 typed in chat and mentioned internet lagging, and with camera turned off for the entire session.
- Student 7 never participated, and with camera turned off for the entire session.
- Student 8 typed in chat, and with camera turned off for the entire session.
- Student 9 never participated, and with camera turned off for the entire session.
- More than half of the students participated for screen annotations, but not all
- Students mentioned they are confused on the instructions and ask their classmates in the breakout room.

### **Overall Experience**

- No one showed faces.
- The instructor talked for the entire first 90mins of class then gives a short break.
- There is one time when the instructor asks for participations and the silence keeps up for almost 1 min.
- The course materials seemed confusing and the overall classroom vibe felt negative.
- The instructor had to bring everybody back in the main session and gave the students more understandable explanation on the instruction and send the students back in break out rooms again.
- The instructor apologized for poor consideration
- Class ended on time

### **Food and Drinks**

No observation because no cameras were turned on

**Build Environment**

Zoom, tools are listed in menu bar on the bottom of the screen

**Possessions**

No observation because no cameras were turned on

**Media consumption**

No observation because no cameras were turned on

**Tools and technology**

Chat, breakout rooms, annotations, show of emotions(thumbs up, smile face, raise hand and etc.)

**Demographics**

37 participants attended the session

**Family and Kids**

No observation because no cameras were turned on

## **Session 2 Field Study Notes**

**Date:** 1/19/21

**Time:**

**Class:** HCDE 301

### **Participants that attend all three sessions:**

**Student 1, Student 2, Student 3 Student 4, Student 5, Student 6, Student 7, Student 8, Student 9**

### **Information and Communication Access**

- Student 1 typed in chat, and talked, with camera turned on for the entire session.
- Student 2 talked with camera turned off for the entire session.
- Student 3 talked and shared group representation, camera turned off
- Student 4 never participated, camera turned off for the entire session
- Student 5 talked, and camera turned off for the entire session
- Student 6 typed in chat, camera turned on for the entire session
- Student 7 mentioned he is living in different time zone and his family is sleeping, while he was talking the class.
- Student 8 typed in chat, and camera turned on for the entire session
- Student 9 typed in chat, camera turned off for the entire session

### **Overall Experience**

- No awkward silences, class is structured well and not many questions asked by the students.
- Felt like normal physical class room where students ask and answer questions.
- A good 10 min break was given
- Class ended on time

### **Food and Drinks**

Student 6 walked out of the room several times in the middle of the class to grab food

### **Build Environment**

Zoom, tools are listed in menu bar on the bottom of the screen

### **Possessions**

A cat walking back and force in front of student 8's camera

### **Media consumption**

No observation detected

### **Tools and technology**

Chat, breakout rooms, group presentations

**Demographics**

65 participants attended the session

More people turned on their camera

**Family and Kids**

Student 7 mentioned living in different time zone and family is sleeping

### **Session 3 Field Study Notes**

**Date:** 1/19/21

**Class:** HCDE 301

#### **Participants that attend all three sessions:**

**Student 1, Student 2, Student 3 Student 4, Student 5, Student 6, Student 7, Student 8, Student 9**

#### **Information and Communication Access**

- Student 1 never participated, and camera turned off for the entire session
- Student 2 talked, and camera turned on for the entire session
- Student 3 typed in chat that he can't talk because of construction noise in the background
- Student 4 talked, and camera turned on for the entire session
- Student 5 didn't participate at all, and camera turned off for the entire session
- Student 6 typed in chat and mentioned internet lagging, and with camera turned off for the entire session.
- Student 7 typed in chat and talked whispering, and camera turned on for the entire session
- Student 8 typed in chat, and camera turned on for the entire session
- Student 9 didn't participate at all, camera turned off for the entire session

#### **Overall Experience**

No awkward silences, class is structured well and not many questions asked by the students.

Class was structured more like a discussion of a reading.

- No awkward silences, class is structured well and not many questions asked by the students.
- Class was structured more like a discussion of a reading.
- A good 15 min break was given
- Class ended 10 minutes early

#### **Food and Drinks**

Student 4 had food beside, eating while watching the lecture

Student 8 had Starbucks next to them

#### **Build Environment**

Zoom, tools are listed in menu bar on the bottom of the screen

#### **Possessions**

No observation detected



## Media consumption

Student 7 and 8 were on the phone for couple of minutes.

## Tools and technology

Chat, breakout rooms, group presentations

## Demographics

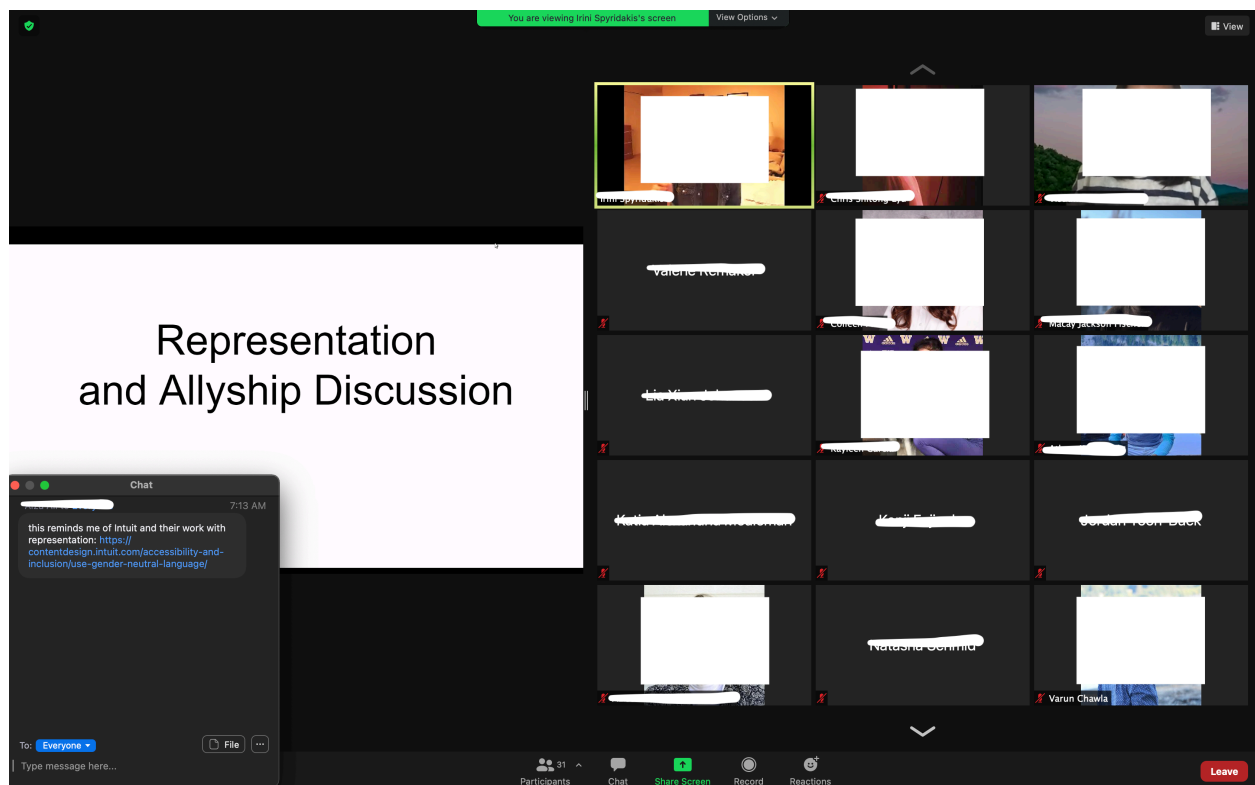
21 participants attended the session

More people turned on their camera

## Family and Kids

Student 7 mentioned living in different time zone and family is sleeping

**Image: Zoom Platform (Student pictures and names blocked for privacy)**



### Appendix 3. Images of Data Analysis

#### Affinity Diagram

