Interactive Courses and Assignments Using Simulation and Gaming in the COVID-19 Era

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Overview

In this chapter, the author introduces an approach to teaching online courses in the COVID-19 era while preserving interactivity in classes and assignments. Due to the pandemic, Japanese universities have had to hold classes online. Accordingly, the author conducted courses online while trying to maintain interactivity in classes. Two practices are introduced here, one involving the use of games in classes and one employing writing assignments and feedback. Face-to-face games were successfully translated into online games using ZOOM®. The games used in online classes included interactive lecture methods using Thiagarajan's (Thiagi's) methods, traditional simulations and games, and commercial games. Thiagi's methods were incorporated into reports regarding lecture material for on-demand courses. In this chapter, the author briefly introduces the procedures and characteristics of original games, followed by a technique for modifying face-to-face activities into online games or writing assignments. After nearly 2 years of practice, the author concludes it is possible to retain interactivity in a class setting, without physical presence.

Keywords

Interactive courses · Simulation and gaming · Online courses · Writing assignments · Thiagi's methods

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Learning Objectives

The reader should be able to:

- Understand the use of face-to-face games in classes using ZOOM®.
- Explore the potential of games in online classes and interactive lectures.
- Learn the procedures and characteristics of the original games, followed by a technique for translating face-to-face activities into online games or writing assignments.

9.1 Introduction

Since the onset of the COVID-19 pandemic, Japanese universities have had to hold all courses online. Before COVID-19, I used face-to-face games for didactic purposes. The new challenge was twofold: transforming face-to-face games to online games and maintaining interactivity in large-sized online classes, where conducting games is impossible.

In Sect. 9.2, I will introduce games that can be transformed into online games and provide concrete examples of these. The transformation is relatively simple in classes of around 30–40 students. However, it is impossible if the class size is over 100. In the latter case, the author tried to preserve interactivity by using interactive assignments, which will be introduced in Sect. 9.3. In the individual sections of this chapter, I will introduce several examples of the games I used. First, I summarize the procedures of the games. Then, I describe how I transformed them into online games or assignments.

Let me briefly explain the educational situation at Japanese universities. The number of students in a course is generally larger than in other countries, especially in private universities. It is common to have over 100 students registered, and it is not rare for a course to have over 600 students. Therefore, the classes inevitably adopt a lecture-style teaching method where students passively join the classes and little or no interaction occurs among students, even though interactive methods could be applicable if simulation and gaming were used. I regularly included games in large classes as well as in smaller classes of up to 50 students.

Japanese universities have two semesters per year. Each semester consists of 15 class meetings, and each class lasts 90 min. In 2020, Spring semester started later than usual (April), as universities had not prepared online courses when the first lockdown started in March 2020. Therefore, many universities had to reduce the number of classes for the semester to 12 or 13. This inevitably required changes in prepared syllabi to coordinate online courses with a reduction in the number of class meetings.

9.2 Transforming Face-to-Face Games into Online Games

In this section, I introduce real-time classes using ZOOM®, transforming face-to-face games into online games. Some face-to-face games are easily transformed into online games, without any changes to the rules, whereas others require rule changes, sometimes minor, when played online. I adopted commonly used training games and commercially available games (i.e., sold in shops). In the latter case, I prepared enough copies of the games for students even when one or a few copies would be enough to play the game online. This, I think is very important for avoiding violation of copyrights.

The course was "Social Psychology" and focused especially on communication. Therefore, games were selected that touched on perspectives related to communication. I recognize that many existing games can be played with no or slight modifications to the online rules.

In the following subsections, I will introduce four concrete examples taken from 15 classes. One is from the interactive methods developed by Thiagarajan (termed "Thiagi's methods" hereafter), and three are commercially available games. All deal with issues of communication and debriefing, with lectures on psychology-related concepts or theories provided by the facilitator, i.e., this author.

9.2.1 "Quick Scan"

"Quick Scan" is one of the interactive methods developed by Thiagarajan et al. (2015). It is also the name of a framegame he developed. A framegame is a training game for facilitators that allows easy loading and unloading of content, which means that the games can be used for different lecture contents.

I briefly summarize the basic process of "Quick Scan" (for more detail, see Thiagarajan et al., 2015). First, a facilitator assigns four questions to four teams, each of which is assigned a different playing card suit. Each question corresponds to a suit. Second, participants on a team are asked to collect information from those who are on a different team (i.e., who have been assigned different questions). After information collection is complete, each team shares information about the questions assigned and presents a report.

I changed the basic procedure to fit the online class using ZOOM®. I used the game at the beginning of the course, which meant that the students were not completely familiar with the functions of ZOOM®. First, I divided students into four teams without using physical playing cards, using instead an online four-sided die that Google offers online. Then, I assigned the following four questions to the students:

1. Why did you take this course?
2. What are your expectations for this course?
3. What is your experience of playing games, e.g., digital games or board games?
4. What do you want to learn by taking this course?

After each student was assigned one of the questions, I divided them into four groups using the breakout room function. The difference between the original "Quick Scan" game and mine is that students themselves answered the assigned questions. They did not collect information regarding assigned questions. In each group, students shared their answers or thoughts about the question assigned to them. When sharing ended, I made new breakout rooms with two students in each room. There, students were asked to share (in pairs) content from their group's discussions. Finally, I made new breakout rooms that differed from the first set and asked students to share the conversations they had when they were in pairs.

I had two aims in adopting the game. First, I hoped to discover students' thoughts about taking the course. Second, I hoped to encourage students who were not familiar with each other to disclose information about themselves through this form of self-introduction. "Quick Scan" is an interactive method and framegame developed by Thiagarajan et al. (2015). A framegame is a training game for facilitators allowing easy loading and unloading of content. A framegame can be used for different lectures.

9.2.2 "Ungame®" and "Black Stories®"

"Ungame®" is a commercially available game that is used not only for fun but also for training purposes. It is a non-competitive card game with open-ended questions. Some of the questions are light-hearted, whereas others are serious or require more self-disclosure.

I used this early in the course to encourage students' self-disclosure and to introduce the concept of "open-ended" questions. By playing the game, students naturally disclosed things about themselves and learned what open-ended questions were through experience.

"Black Stories®" is also a commercially available card game. Since it has gained popularity, many variations have become available in stores. Basically, any version can be used for classes. It is a game of solving riddles through deduction, e.g., discerning how a strange accident happened. One person reads a card to start the game (players assume the roles in turn), and only that person knows the answer to the riddle. This person reads a short sentence describing the accident, and other players deduce the answer by asking questions. However, these must be "yes–no" questions. In other words, it is a "closed question" game. It is also suitable for teaching lateral thinking because creating unconventional questions increases the possibility of winning.

I used "Black Stories®" after the class played "Ungame®". Connecting two classes with different patterns of questions leads to a better understanding among students of both types of questions.

Both games can be played in groups of 4–6, therefore I used breakout rooms. The only change when playing the games online is to send cards to players using the chat box in breakout rooms.

9.2.3 "Just One®"

"Just One®" is a cooperative game in which players give clues to the active player (players take the role in turn), whose goal is to guess mystery words. Players other than the active player secretly write down a clue to assist her/him. However, if some of the players write the same clues, they are cancelled before the active player is allowed to see them. Thus, the more identical clues students write, the fewer clues the active player receives. Therefore, players other than the active player must consider what other players might write as a clue. The game can be played using breakout rooms (Fig. 9.1). No change in rules is necessary. I used the game to teach the concept of "illusion of transparency" (Gilovich et al., 1998), as students naturally noticed while playing the game that their understanding of what others think was often wrong. The clues were often identical. In addition, playing several rounds led students to more correct predictions. In the debriefing session, I emphasized the importance of careful listening in communication, while being aware of the phenomenon of the "illusion of transparency". From the experience of the game, they could transfer their knowledge to real-life communication.

9.2.4 "Bring Your Own Book®"

"Bring Your Own Book®" requires that players find an appropriate phrase in response to a prompt given by a picker (players take this role in turn). The books used in the game are from participants' own shelves. Within a minute after a player announces that s/he has found a phrase, players should find a phrase in their own books. After all players present their phrases, the picker chooses the best phrase and awards the player who selected it.

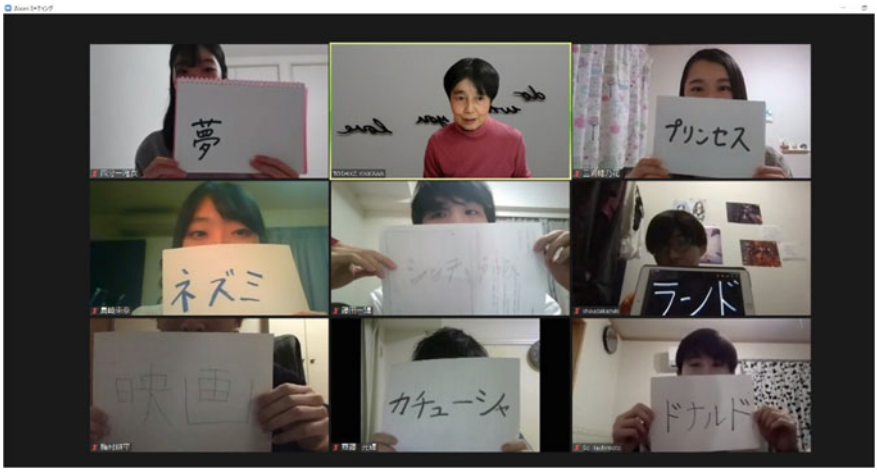

Fig. 9.1 Students were shown clues in the "Just One®" game. The mystery word for this round was "Disney"

Fig. 9.2 Students were shown the clues in the "Bring Your Own Book®" game. They took books from shelves at the beginning of the game. (Photos made by the author)

The game can be played in breakout rooms (Fig. 9.2). Debriefing in each breakout room is very important when using this game in university classes. Students naturally explain why they chose their books, which reveals something about themselves in a sense. In addition, students easily gain feedback from other students in the room. The game is fun, and these processes induce active conversation, making the game especially effective for those who feel hesitant in public and reluctant to join conversations.

Do you want to know what your students are thinking? If yes, "Quick scan" is suitable for your course.

1. How many students are in your class? If you cannot obtain enough game kits for all of them, I recommend using five of them to avoid copyright issues.
2. Are you interested in improving the communication skills of yours? students? The games I introduce here naturally promote conversation.

9.3 Transforming Face-to-Face Games into Interactive Assignments

For larger classes with over 100 students, it is impossible to have real-time classes. All classes inevitably have to be on-demand. In my case, the maximum number of students was around 400. It is rather difficult to include interactive elements in

videos or materials offered online. Therefore, I decided to maintain interactivity by introducing it into the assignments. I used this method for an organizational psychology course, though the methods are applicable to other courses as the assignments are not content-specific.

The basic idea is to use the results of students' first assignments as the next assignment. The results of the first assignments, thus, function as feedback. The concrete examples in the following sections will offer a fuller understanding of the assignments. Here I use the term "interaction" to mean not simultaneous interaction but delayed interaction or indirect interaction. I consider that one of the important elements of interaction in classes is being aware of other students' diverse thoughts and thereby expanding and deepening one's own perspective. In other words, the aim was to develop meta-cognition (see Lewis (2003, pp. 118–119) for a discussion of "theory of mind") such that interaction is achievable even if it is not identical to face-to-face interaction.

I will introduce six concrete examples. Five of them are modifications of Thiagi's interactive training methods, and I developed one myself. I used these methods in teaching the organizational psychology course, though the methods are applicable to courses other than psychology because they are not content-dependent. Thiagi's interactive training methods are originally conducted in a time frame and face-to-face. I divided the tasks included in each method to transform them to assignments and feedback. In the following sections, I first briefly describe the original games and then explain how I transformed them into writing assignments.

9.3.1 "Open Book"

"Open Book" is an interactive activity to familiarize participants with pertinent reference manuals (for details, see Thiagarajan, 2006). Thus, this activity is especially suitable for use at the beginning of courses to help students gain an overview of the textbooks.

The original game flow can be summarized as follows. (1) Participants review the textbook and then generate questions (quizzes). They write each question on an index card and write a page reference on the back of the card. It is not necessary to write an answer, as the purpose of the game is to gain an overview. (2) Working as a team, participants compete to find the reference page number when the facilitator reads the questions.

I divided the tasks into two assignments. For the first assignment, students were asked to create 10 questions by "scanning" the textbook and write a reference page number for each question. After I collected the first assignment, I selected 10 questions and created the second assignment leaving the reference page numbers blank. The second assignment naturally offered students opportunities to recognize which content other students had focused on in the textbook and review it again to answer the quizzes.

"The Fifth Sentence"

"The Fifth Sentence" is aimed at developing a synopsis, consisting of five sentences, after the lecture (for details of the procedure, see Thiagarajan, 2017). This activity can be used at any time during the course.

The basic procedure can be summarized as follows: (1) Working as teams, participants write five sentences that summarize key points of the lecture or presentation. (2) One team reads four of the five sentences, and other teams guess the sentence that was left out.

I divided this task into two assignments. For the first assignment, students were asked to write five summary sentences covering key points of a lecture. After collecting the assignments, I selected two of them to create the second assignment. For the second assignment, since most students follow the order of the lecture material when writing their five sentences, I removed the fifth of five sentences from one student report and the third from another (Fig. 9.3). The assignment was to guess the missing sentences and write them down. The process requires students to review the lecture again, taking the other students' perspective.

In the selection process, I looked for two reports that differed in their focus and key points. In other words, I selected them to make it clear that each student interprets the lecture from a unique viewpoint, even if they read the same online lecture material. This may occur in the face-to-face class situation, though students may not be aware of the fact if they do not interact.

Identify the sentence left out of the following two students' summaries.

Student A

1. In the Lego experiment, the participant created more Bionicles in the meaningful than Sisyphus condition.
2. Ignoring people's work is almost as bad as shredding it in front of them.
3. The easy cake mix was less popular than the recipes that required work, such as adding eggs and milk.
4. In the origami experiment, the participants appreciated their own work more, while the evaluators appreciated it less. The effect was larger for the "hard" instructions.

Student B

1. It is not difficult to motivate people; even a small amount of meaning can motivate them.
2. Loss of meaning reduces the joy experienced through work.
3.
4. People evaluate their work more favorably when they make more effort.
5. Self-evaluations are not the same as evaluations by others.

Fig. 9.3 Second assignment pertaining to the "Fifth Sentence" (translated into English). The video concerned motivation: https://www.ted.com/talks/dan_ariely_what_makes_us_feel_good_about_our_work?

9.3.2 "Missing Item"

The assignments sometimes include preparation. "Missing Item" (for the detailed procedure, see Thiagarajan, 2017) can be used for this purpose. The original activity is a guessing game where students in teams guess a missing item in the presentation/lecture.

For the on-demand course, I used PowerPoint® presentations with narration as course material. For one of the classes, I omitted one slide. The assignment was to make a slide based on the textbook. After I collected the reports, I collected about 30 slides from a total of 400 made by the students and added the slide I had removed from the original set. The purpose of the activity was two-fold. (1) After students got feedback from my slides and others, they could review the content of the class; (2) introducing various slides made by students again drew their attention to the existence of diverse thoughts and perspectives, based simply on the same textbook.

9.3.3 "Postcard to a Friend"

"Postcard to a Friend" (see Thiagarajan, 2006, for details) is designed to review a training session or, in this case, a class. The basic idea is very simple: to summarize the content of a learning experience in the form of a postcard.

For this assignment, I asked students to write a postcard to a friend summarizing or highlighting the content of a lecture. I selected about 40 postcards from the 400 postcards submitted. Here, I paid attention to selecting postcards that focused on different points in the lecture and that used diverse forms of expression, e.g., variations in writing style or the use of figures. Although the number of student postcards introduced was not large considering the class size, I believe they provided students with an opportunity to recognize that others would focus on different points in the same lecture and would employ diverse forms of expression.

9.3.4 "Twos and Threes"

"Twos and Threes" (Thiagarajan, 2005) is an effective game for reviewing what participants learned by having them create questions of their own. The original procedure includes creating closed and open questions, then answering questions in groups of three.

However, I used only open questions to simplify the assignment. In the lecture, I explained the difference between open and closed questions, as the lecture was related to organizational communication and these were the penultimate and the last classes of the course. Therefore, using the textbook as material for constructing review questions was very suitable as a last assignment. For the penultimate assignment, I asked students to create 10 open questions based on the textbook and lectures and to write answers to their questions. After collecting their assignments, I

Answer the following questions prepared by your classmates.

Quiz	Your answer
1. What "idiosyncratic credit" is useful for organization?	
2. Describe ways to fairly evaluate performance.	
3. Describe two ways of preventing loafing.	
4. What is YOUR leader prototype?	
5. What positive effects are expected in an organization in association with trust between a leader and their followers?	
6. Give an example showing how group decision-making is not necessarily the best approach.	
7. If you do not use "stage models" of career development, how does your perspective change regarding your career?	
8. What should you do to ensure that all members of your group are satisfied with the decision?	
9. Describe some social norms.	
10. What is the most important ability among the five that Krumboltz proposed in relation to "planned Happenstance"? Please explain why.	
11. What is the difference between "transactional leadership" and "transformational leadership"?	
12. Describe your experience with one of the symptoms of "groupthink".	

Fig. 9.4 Example of a student's work on the last assignment. Translated into English

selected 10 questions and developed the last assignment using them (see Fig. 9.4). The students' task was to answer the questions, as the answers were left blank. To complete the two assignments, students had to review the course twice, i.e., when creating their own questions and answers (the penultimate assignment) and when answering questions created by other students (the last assignment).

I chose the "Open Book" activity as a start, as it enables students to get an overview of the course. "Twos and Threes" requires a deeper understanding of what they have learned throughout the course and is thus suitable for use at the end of the course. The last assignment is shown in Fig. 9.4.

9.3.5 "Slogan Contest"

In addition to modifications of Thiagi's interactive methods, I used several new assignments with an element of interactivity. One was "Slogan Contest," which is easy to use.

In this assignment, I asked students to invent a slogan based on the content of the lecture. For example, with respect to the lecture about occupational safety, I asked them to invent a good slogan to prevent accidents in the workplace. When I taught stress management, I asked them to invent a slogan that could ease their own mind when they encountered stressful situations in the future. As these slogans are simple and short, I selected as many slogans as possible and incorporated them into a

feedback file. Inventing slogans can help students to summarize content in concise and essential terms. The process can also work as a review of the lecture when the students read others' slogans in the feedback file.

1. Do you want your students to grasp the entire concept of the course at the beginning? If so, "Open Book" is the most suitable activity. It can also be used at the end of the course for review purposes.
2. Do you want to review the content of all classes? In yes, "The Fifth Sentence", "Missing Item", "Postcard to a Friend", and "Twos and Threes" are suitable and can be applied at any time during the course.
3. Are your students familiar with the course material? If yes, "Slogan" is recommended because it requires knowledge of the course content.

9.4 Conclusion

From my almost 2-year experience of applying the interactive methods introduced in this chapter, I am now confident of their applicability. I did not introduce them in all of my classes, but I believe that readers could gain some insight into the process if they are interested in applying games in online courses.

Regarding the games introduced in Sect. 9.1, many other games could be played, and I did use many in online courses. I also used competitive games like "Battleship". However, I consider that games associated with a communication theme would be more suitable for online courses. Besides, communication games may often be more effective when played online than when played in face-to-face classes because online conversation decreases hesitation to talk in public, particularly for students who find it difficult to talk in class. Of course, face-to-face communication games will continue to have pedagogical value.

I would like to emphasize that the modification of the interactive activities to writing assignments could expand future possibilities of simulation and gaming methods in university education. Although I only have experience with their online application in university courses, I envisage how these methods can be used in other educational settings, e.g., high schools. I recognize that tangible elements and face-to-face interaction are invaluable for education. However, I believe that the possibility of hybrid methods that combine conventional educational methods and online applications could be a good lesson for us in this difficult COVID-19 era. These new ways of using games will allow students to understand the importance of communication, develop their listening abilities and provide constructive comments. They could also increase awareness of certain issues, particularly real-world ones.

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