

# Online Education Patterns, Part 2: Patterns for Creating a New Form of Learning

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In this paper, we present 12 patterns for Creating a New Form of Learning from the Online Education Patterns. This pattern language is based on dialogical mining interviews with 25 teachers of all levels from elementary school to university with unique practices or are trying to improve their online classes with their own ingenuity. This pattern language consists of one core pattern and 36 patterns, which are divided into three categories: LINKING SEPARATE WORLDS, CREATING A NEW FORM OF LEARNING, and BUILDING A SENSE OF BELONGING. In this paper, we will present the 12 patterns in the CREATING A NEW FORM OF LEARNING category. Patterns in this category aim to help teachers realize a new form of learning using the online environment and fully utilize the possibilities that an online environment has to activate creative and collaborative learning. At the end of this paper, summaries for each pattern are presented in the appendix.

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## 1. INTRODUCTION

The COVID-19 pandemic has led to schools to close all around the world and made a sudden shift away from classrooms. As a result, education has changed dramatically, where teaching and learning have become distant and moved to online platforms.

The importance of school as a place for effective teaching and learning have been long discussed and researched. In the Iba Laboratory, we have presented patterns for education such as Active Learning Patterns for Teachers (Iba, Utsunomiya, 2017), Educational patterns for generative participants (Shibuya *et al.*, 2013), Pedagogical Patterns for Creative Learning (Iba *et al.*, 2011). There are also other educational patterns including *Pedagogical Patterns: Advice for Educators* (Bergin *et al.*, 2012) which show techniques for assisting in teaching and learning, and New Hybrid Education Patterns (Kohls *et al.*, 2018), which support educational designers to incorporate hybrid aspects into their educational design, including online and offline.

Wisdom from the above tips and tricks are certainly important and useful for a better teaching and learning environment. However, with the pandemic, it was inevitable for many schools to move online. There, many teachers went online with the intention of replacing their traditional classroom setting to an online setting, and worried about the limitations and difficulties of the many things that they cannot do because classes are online. It is only natural to encounter difficulties when trying to conduct content that was designed for a real classroom online when it is a completely different environment. It may seem like online learning is still merely a replacement and nothing better than an in-person environment for “better” learning. Those who are used to real classrooms tend to focus on what is lost in online classes.

Although online learning has emerged as a necessary resource for students and schools to learn as more of an emergency measure, with online learning at the core of the recent education transformation, there are many ways in which we can take full advantage of the positives and features of online and distance learning. There are online platforms and online ways of teaching and learning have been found to be effective. In her research, Dixon found three conclusions relating to effectiveness of online instruction which are that “1) online instruction can be as effective as traditional instruction; 2) to do so, online courses need cooperative/ collaborative (active) learning and 3) strong instructor presence” (Dixon, 2010). Additionally, compared to traditional offline classrooms, “online education has greater flexibility....and a more efficient learning process” (Zhu, 2020). The online learning as to the offline does not have to be merely an emergency or fill-in solution that it once was, but with the right tips and tricks, online learning can have many benefits.

In part 1 of the Online Education Pattern series, patterns from the first category, LINKING SEPARATE WORLDS, were presented, where we have come to understand that despite physical distance, it is possible to design online classes for teachers and students to feel closer and to feel each other’s presence (Hayashi *et al.*; 2021). In this paper, the patterns of the second category CREATING A NEW FORM OF LEARNING are presented. Patterns in this category provide hints on designing online classes for teachers and students that provide

experiences that only an online environment can realize, and make us realize being online is not all that disappointing.

## 2. CREATION PROCESS

This pattern language for online learning was created in accordance with the creation process developed by Iba lab, which contain three different phases Pattern Mining, Pattern Writing and Pattern Symbolizing (Iba and Isaku, 2016).

### 2.1 Pattern Mining

In the Pattern Mining phase, we conducted dialogical mining to extract good practices from teachers, wrote summary sentences for each of the findings from the dialogues minings, compounded those summaries to make pattern seeds, and then used those patterns seeds and summaries to weave the whole of the pattern language.

The dialogical minings were conducted with 25 teachers from elementary schools, junior high schools, high schools and universities, who have made great efforts to find the best ways of online learning under the difficulties from the sudden circumstantial and environmental changes due to the COVID-19 pandemic. Teachers who were said to have good classes according to student surveys, those who were featured on the web, and those introduced to us were chosen for the dialogical minings. Most of the teachers began online teaching after the pandemic and have different teaching backgrounds with varying subjects. Every mining session was approximately one to one and a half hours long and was conducted with one or two teachers each session, collecting information on what practice and action is important in online learning, how to carry that out and why that is important to do.

After the dialogical minings, we wrote summaries of each finding while determining and grasping the essence of the practical knowledge. Those summaries are then made into pattern seeds or merged with other summaries with similar essence to form pattern seeds. The pattern seeds are written in a simple format of context, problem, and solution which makes each idea easy to understand and easier to handle when weaving the whole of the pattern language.

Weaving the whole of the pattern language is the process in which the whole structure of the patterns is determined considering similarities and the relations among the patterns. It begins with a bottom-up approach, considering the readers' perspectives as well as the heuristic level of each pattern. Then with a top-down approach the significant cores of the pattern language are found and defined, and consequently the three main categories with four groups in each were structured and generated.

### 2.2 Pattern Writing

During the Pattern Writing phase, we nurtured and grew the pattern seeds into full description patterns that include context, problem, force, solution, action and consequence. When writing the patterns, details discussed in the dialogical mining, the positions of each pattern in the whole pattern language, and experiences that we as students and authors, were carefully considered.

Patterns were written individually, reviewed in group discussions, and then rewritten individually. Revising and discussion were repeated so that the patterns can reach a high level of quality. As the essence and details of each pattern becomes clearer throughout the writing process, it is necessary to reconsider the relationships and positions of patterns and re-weave them.

### 2.3 Pattern Symbolizing

Pattern Symbolizing, the last phase in creating a pattern language, is when patterns are named. Pattern names are based on the solution and the contrast between the problem and consequence. Not only are the names chosen so that they convey the meaning and content of the pattern, but also so that they are attractive and makes people want to use the pattern.

## 3. OVERVIEW OF THE PATTERN LANGUAGE

An overview of this pattern language is shown in Fig.1. As indicated in the figure, this pattern language is comprised of one core pattern and 36 patterns categorized into three different categories: LINKING SEPARATE

WORLDS, CREATING A NEW FORM OF LEARNING, and BUILDING A SENSE OF BELONGING and each category is further categorized into four groups, comprising of three patterns in each group.

## Online Education Patterns

A Pattern Language for Designing Learning Styles in the Online Age

### 0. Redesigning for Online Learning

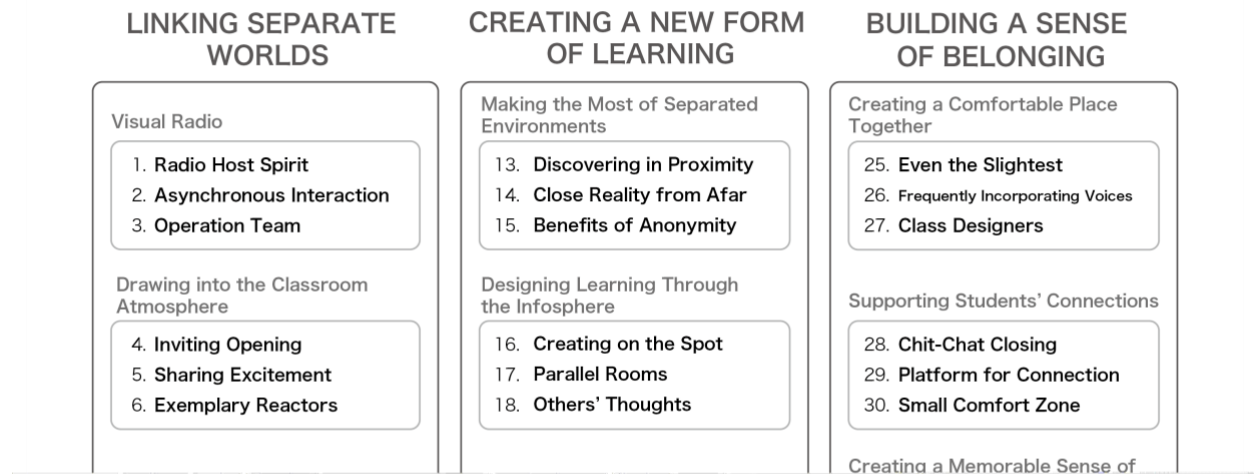


Fig. 1. Structure and Pattern Names of the Pattern Language

## 4. PATTERNS

In this paper, we present the second category of this language: CREATING A NEW FORM OF LEARNING. In this category, there are four groups, namely, *Making the Most of Separated Environments*, *Designing Learning Through the Infosphere*, *Developing a Whole from Parts*, and *Beyond the Timetable*. Each group consists of three patterns. This category is made up of patterns that advocate creative ways of learning that is unique to online or can be done effectively in the online environment.

### 4.1 Discovering in Proximity

*Making the Most of Separated Environments*

No. 13

## Discovering in Proximity

Taking advantage of being in remote places.

Everyone is taking the class from different remote locations.

▼In this context

**With everyone being remote, you cannot provide every student with equal learning environments since you cannot pass things out physically nor have everyone look at the same tangible thing closely.** In the classroom, where everyone is gathered together physically, everyone can go to the same place to do fieldwork and observe and feel the same things. However, in online classes, everyone is connected remotely, so there are differences in conditions of each student's location and environment. In such a situation, trying to create equal experiences by replacing fieldwork with videos or something digital may spoil the experience that could have been there.

▼Therefore

**Take advantage of the fact that everyone is participating from a different place, and have each student bring something from their own surroundings and what they have discovered there.** Instead of looking at the same thing together, pick a theme and have everyone focus on what they see around them. For example, have students do fieldwork and make observations in their own houses or in the area where they live, and share their findings with each other. With everyone having different surroundings and points of view, it can be interesting to see what those differences are and the individuality that comes from it.

▼Consequently

Being in different places can be a unique quality of having online classes, and at the same time, you and your students can enjoy the discoveries that everyone brings to the table. Also, by observing familiar objects and the environment anew, you and your students may discover new ways of seeing things that no one ever gave much thought about.

### 4.2 Close Reality from Afar

*Making the Most of Separated Environments*

No. 14

## Close Reality from Afar

There is information that can only be delivered from an actual place.

You and / or guest speakers are connecting from overseas and remote areas.

▼In this context

**Even Students may find it disappointing that the experience of being able to meet and listen to the teacher and guest speaker(s) can no longer be realized because of the online setting.** In the classroom, listening to lectures while being in the same place itself functioned as an experience that went beyond just receiving information. However, even though students can listen to the lectures online as well, they can feel unsatisfied having the teacher and / or guest speaker(s) behind the screen.

▼Therefore

**By showing and talking about the local area and environment from where you and / or guest speaker(s) are currently in, you can give students a sense of what it is really like there.** Utilizing the advantage of

connecting online, which is that people can connect from any place, allows you to show what is currently happening there in real time. For example, field reports and connecting live can provide a more vivid picture of the local atmosphere and recent developments. It is also easier to invite guest speakers from overseas or remote areas, so it is a good idea to invite those who are not able to come to the classroom but can participate online.

▼Consequently

Listening and seeing what it's like in real time will give students a different sense of reality than listening in a classroom. You can create new and valuable experiences that are different from those in the classroom by showing them things that can only be done remotely, such as enjoying events or occurrences together that are happening at that very moment.

#### 4.3 Benefits of Anonymity

*Making the Most of Separated Environments*

No. 15

## Benefits of Anonymity

Intentionally incorporate communication that hides faces, names and attributes.

You are thinking about how to gather opinions and communicate in online classes.

▼In this context

**If you only communicate in the same way as in the classroom, you will miss the opportunity to take advantage of things you can do only online.** When teaching in the classroom, everyone can see each other's faces and inevitably communicate while taking in consideration people's attributes. However, that also means that the content of what is said is always tied to the speaker and it is easy to become concerned about who made what kind of statement. Many students tend to refrain from speaking out, or feel pressured to say something smart. It is also easy to associate anonymity with negative images, thus, it should not be used in classes.

▼Therefore

**By introducing an online tool that allows people to write anonymously, you can create a situation of communication that would never be possible in a real classroom.** It is only online that we can communicate while hiding all our faces and names. You can try to take full advantage of this and incorporate it into your classes. Some teachers have developed a class where students do group work for a whole semester without revealing their names or faces to each other, just communicating using their handle usernames. If students use a username, you can link it to their real name so that you can keep track of it in case of emergencies or for grading purposes.

▼Consequently

When the filter of "who" is removed and comments are separated from the individual, it becomes an opportunity to create new forms of communication and self-expression. When classes are conducted using an anonymous way of communication, it is possible to create an active space where students can write their honest feelings, reactions, and impressions. Proactively using what is possible only online will also make online classes more attractive.

#### 4.4 Creating on the Spot

*Designing Learning from the Infosphere*

No. 16

## Creating on the Spot

Seeing from the creator's side.

You are working with paper or drawing something on the screen.

▼In this context

**If you teach how to make things only using slides and verbal explanations, it will be difficult for students to learn how to make things with a real feeling.** In online classes, the teacher and students are not in the same space, so you tend to think that it is not possible to demonstrate and experiment as in a classroom. However, if this is the case, the detailed movements of the hands may not be conveyed, and the students may not be able to experience the excitement of creating something right in front of their eyes.

▼Therefore

**Share in real time the process of drawing diagrams on the computer, or working with your hands or creating something, so that students can experience the perspective of the creator.** For example, when drawing a diagram on a computer, the screen can be shared so that students can experience the actual work and process that the teacher goes through. If it involves hand-held work, you can lean the computer or prepare another camera to share the hand movements from eye level. This takes advantage of the online environment of everyone being able to see from the same camera viewpoint. You may also want to have students work on their own hands at the same time as you project your own.

▼Consequently

By sharing the perspective of the creator, it becomes possible to show the process of creating something as if you are showing and explaining it in front of the students. In this way, students feel as if they are working with their hands, which makes it easier for them to get involved in the class and absorb the creation process. Since the class becomes an "experience" rather than a mere means of acquiring knowledge, it is easier for the students to remember and reproduce the same process later.

### 4.5 Parallel Rooms

*Designing Learning from the Infosphere*

No. 17

## Parallel Rooms

Multiple presentations at the same time.

You are trying to create a place for students to present the outcomes.

▼In this context

**Even if you want to give each student an opportunity to present their work, time constraints mean that only a representative can give a presentation, or the amount of time each student is assigned may be extremely short.** Opportunities to present results are very important, but due to limited class time, it is not possible to give students enough opportunities to produce output. Even if students understand what they are taught in class, it is difficult for them to acquire truly usable knowledge if they do not have the opportunity for output.

▼Therefore

**Divide the class into several breakout rooms and have each room have its own presentation, so that all students can have enough time to present.** If you have parallel sessions in a real classroom, it will take time to move from one room to another and also take up a lot of literal space, but online, you can instantly divide the participants into breakout rooms. Also, it is a good idea to allow participants to move freely between rooms, and to devise the content of each room's presentation in a way that suits the purpose of the class.

▼Consequently

Each student will have the opportunity to make a presentation and reflect on what they have learned in class. In this way, they can learn more through output and consolidate what they have learned. Furthermore, if the participants listen to the presentations in small groups or allow them to choose the rooms they are interested in, they will have a greater sense of proactive participation.

#### 4.6 Others' Thoughts

*Designing Learning from the Infosphere*

No. 18

### Others' Thoughts

Seeing from other students' perspectives.

You are trying to get students to share their thoughts on the class and comments on students' works.

▼In this context

**If students only submit their thoughts and comments to the teacher or the person who created the work, they will only be summarizing their personal findings and will miss the opportunity to make new discoveries.** When students reflect on the class or write comments on other students' works, it is a good opportunity to output their thoughts, but it inevitably leads to thinking only from their own perspective. If this is the case, students will not be able to fully utilize the environment where they can learn together with other students and be exposed to various ways of thinking.

▼Therefore

**Let students freely write and read comments on the class content and students' works, so that they can also learn from what other people felt and thought.** For example, they can submit their impressions of the class on the class-wide *Platform for Connection* so that students who have seen the same class and its products can see what others think. Students will be able to see what other students who have seen the same class or artifacts have thought about it. They will also be able to freely add comments to their impressions, and all students will be able to check the exchanges there.

▼Consequently

When students read the comments of other students, they may be able to focus on points they had not considered before or see things from new perspectives that they had not noticed on their own. The members of the class will be able to inspire each other by thinking differently and seeing from different points of view. Also, even when the class members are in different locations, they can inspire and improve each other.

## 4.7 Starting Small

*Developing a Whole from Parts*  
No. 19

### Starting Small

Expanding the circle of discovery.

You would like to discuss certain topics with students.

▼ In this context

**If you suddenly ask your students to speak in front of a large group of people, many may be hesitant to share their opinions.** People are inevitably concerned about what others think of them. If there is a mix of people with higher grades or years of experience in the group, they are more likely to worry about whether or not the answer to their question is correct or meaningful before they speak up. This leads to a passive attitude of waiting for someone else to speak up, and the class becomes a place where opinions are not easily shared by the whole group.

▼ Therefore

**When having students discuss with each other, start with a small group of two to four people, and then have them introduce what was said in those small groups to the whole group, so that each person can easily express their honest opinions and small ideas.** A small group is a very important starting point for sharing opinions because it creates a sense of urgency to speak up and at the same time a sense of security. For example, you could design the first breakout room to be a group of people at the same level, such as by grade or skill level, and the second group to be a group of people with variety.

▼ Consequently

By starting with a small group, each student will have a chance to speak, and a variety of opinions will be shared. Then the opinions expressed in the group are shared with the whole group, which separates the opinions from the people and makes it easier to share opinions with the whole group. In this way, the development of the group from a small group to a whole group naturally leads to ideas and opinions being expressed to the whole, and the quality of the discussion increases.

## 4.8 By Students for Students

*Developing a Whole from Parts*  
No. 20

### By Students for Students

Students create their own textbooks.

There are contents that you want students to learn.

▼ In this context

**If all educational materials and information prepared in advance, there will be fewer opportunities for students to think and discover on their own.** When teaching, things that you feel are important from your



experience and that you want to teach will come up one after another. However, if only the answers and important elements are summarized, students will have difficulty visualizing the reasons why they should learn them, and will learn them as if they were memorized.

▼ Therefore

**Rather than prepare teaching materials yourself beforehand, have students create their own learning materials to create learning in the class together.** For example, ask students to create some kind of outcome as the individual or the group work, and make opportunities for other students to experience other outcomes during the class. Then you will have a time where students can share with each other what they found difficult or important when they made it, and what participants thought when they experienced it. In this way, design the learning gained from the experience of making in individual groups to be reflected on by the whole class in order to become a learning experience for the whole.

▼ Consequently

The discoveries and learnings that students make in the process of actually creating the material will enable them to think while connecting themselves to the learnings they have obtained. In this way, the learning will become more vivid, as students will be able to put it into the knowledge of why they are learning and why they think it is important. In this way, the learning gained in the class will become practical learning afterwards.

#### 4.9 Snowball Effect

*Developing a Whole from Parts*

No. 21

## Snowball Effect

Weaving individual discoveries into a whole.

You are trying to create a way for students to explore a certain topic.

▼ In this context

**The more people in the class, the more difficult it is to collaborate, resulting in products being generated in a closed space such as an individual or small group where work is easier.** Discoveries in small groups, such as individual activities and groups, are one of the ways to deepen the learning process, as students have a lot to contribute. However, if the learning is individualized, neither the people who made the discoveries nor the other students will be aware of the interesting and important aspects of the discoveries that occurred individually, and the learning will be difficult to develop.

▼ Therefore

**Have students bring in their own insights and discoveries, or create them on the spot, and then weave them together so that they can lead to greater discoveries as a whole.** For example, design group or individual work to allow exploration of a theme that is part of the whole, so that when these individual activities are combined, they become a single product. In this way, the experience of creating together and making discoveries together within the whole is important.

▼ Consequently

Students will be able to experience the process of making discoveries not just individually which is closed to themselves, but by weaving discoveries together in a whole place. And since the experience is part of the student's own creation, they will naturally consider it as their own, and will proactively create together in the whole place.

#### 4.10 Asynchronous and Synchronous Mix

*Beyond the Timetable*

No. 22

### **Asynchronous & Synchronous Mix**

A new type of class with asynchronous learning.

You are trying to create a way for students to explore a certain topic.

▼ In this context

**There is a difference in the level understanding of lectures among students where some students take longer than others to process information that is taught.** However, in a live, synchronous class, the class content moves from one thing to the next, and students who take longer to input information will have a shallow understanding. In addition, the class format in which lectures are done during class time and groupwork done outside of class, both done in in-person and online classes, makes it difficult for students to find and fit time for groupwork among students' various schedules, and or the workload is skewed to certain students.

▼ Therefore

**Use both asynchronous and synchronous formats, where lecture portions are video recorded, which can be played back repeatedly at any time and students can learn asynchronously, and things learned from the lectures and questions can be exchanged synchronously.** For example, one-way lectures can be recorded so that students can watch them asynchronously, on-demand and beyond the school timetable. Groupwork, discussions and question and answer sessions, and other interactive learning activities between teacher and students or among the students can be done in a live, synchronous class.

▼ Consequently

By watching asynchronous lectures in advance, each student can deepen his or her understanding of the content at his or her own pace and take on the groupwork and discussions that lead to it with better understanding. Live classes can be interactive and encourage students to learn from and stimulate each other. Group work and other activities that are usually done outside the class can be done in real time in the class, so that the teacher, student assistants and teaching assistants can look around breakout rooms and so that students can ask questions. By utilizing the advantages of both asynchronous and synchronous classes, we can develop new ways of learning in class.

#### 4.11 Assignment Checkpoints

*Beyond the Timetable*

No. 23

### **Assignment Checkpoints**

"You can watch it at any time" means "you will never watch."

You are conducting classes that incorporates asynchronous learning.

▼ In this context

**When lecture videos can be viewed at any time, students are more likely to put them off and thus accumulate them.** An advantage of asynchronous on-demand learning is that it can be done at any time with preference of the student, and beyond the school timetable. However, students tend to prioritize other assignments and tasks that are more urgent, and "students can watch it at any time" usually means "students will never watch." As a result, they try to get their assignments done all at once when final exams are near, which leads to their learning becoming temporary and diluted.

▼ Therefore

**Encourage students to watch asynchronous classes without accumulating them by limiting the time they can watch them and setting deadlines for assignments related to those classes.** For example, allow students to replay lecture videos as many times as necessary to preserve the advantage of asynchronous recorded lecture videos, but also set weekly assignments that are based to the lecture. Create a system so that students will not just do the class in a haphazard way but will get their assignments done regularly.

▼ Consequently

You will be able to encourage students to manage their schedules and set assignment goals in such a way that they are neither too bounded by the timetable nor too free, and not accumulate too many assignments. Students will also be more proficient in each class. Deadlines allow you to check students' understandings of each lecture, so you can provide supplementary explanations and respond to students accordingly, and better support student learning.

#### 4.12 Additional Clips

*Beyond the Timetable*  
No. 24

## Additional Clips

Going above and beyond.

You have come across some class content that you would like to share with students who are interested.

▼ In this context

**If you try to teach class content that does not necessarily need to be taught in class, it will squeeze the class time and you will not have time to explain the necessary content.** There may be students who want to learn from the basics, or who could not understand the explanations only in class. However, with limited class time, there is no time to teach from the basics or provide many supplementary explanations.

▼ Therefore

**By providing additional asynchronous, on-demand videos that contain background knowledge, applied content, and follow-up explanations related to the class, you will enable students to further their learning according to their individual levels and interests.** For example, short videos that serve as a review of content that has already been covered in class, or content and techniques that are not normally shared in class can be recorded and made available for students to view at any time. Videos that contain information that can help students understand the class content better are also a good idea. These videos are to help students who want to learn more to keep their learning momentum going.

▼ Consequently

Interested students will be able to learn more by being exposed to information that goes beyond what is taught in class. Students can learn about what they are missing and what they want to know more about, if necessary. In addition, students who do not fully understand the material during regular class time can be followed up on,

providing a more in-depth learning experience. The advantage of asynchronous learning is that you can provide videos that meet the demands of the students.

## 5. CONCLUSION

In this paper, we presented 12 patterns from the second category, CREATING A NEW FORM OF LEARNING along with an overview of all 37 patterns in this pattern language that can be used to improve online teaching. We hope that this pattern language will not only help many teachers create online classes and support their students to have a fulfilling school life even in online classes, but also for online education to not be seen negatively and become a solid option in the field of education.

## APPENDIX

The following is a table with summaries for each of the patterns in the Online Education Patterns.

### Core Pattern

	No.	Pattern Name	Summary
Core	0	Redesigning for Online Learning	In addition to thinking about how the learning you are aiming for can be realized in an online environment, create and redesign the class by adding learning methods that are unique to online.

### LINKING SEPARATE WORLDS

Group	No.	Pattern Name	Summary
Visual Radio	1	Radio Host Spirit	Try to speak and deliver as if you are a radio host speaking to a "listener" who is not in front of you but is listening to you.
	2	Asynchronous Interaction	Enable students to write and send in their thoughts, feelings, and questions after class, and to pick them up and answer them in the next class.
	3	Operation Team	Form a team of two to three or more people to run the class, and divide up the necessary roles.
Drawing into the Classroom Atmosphere	4	Inviting Opening	At the beginning of the class, warm up the room by including content that gives you a gradual start and puts students inside the world of the class.
	5	Sharing Excitement	Enjoy the content of the classes yourself, and try to make the students feel that enjoyment as well.
	6	Exemplary Reactors	During the class, ask some people to keep their microphones on and have them give small responses to what you say.
Feeling Each Other's Presence	7	Encouraging Cameras On	Encourage students to turn on the camera and make them be able to feel each other's presence.
	8	Written Voices	Encourage students to write their thoughts and feelings in the chat space during class.
	9	Spark Plug for Chats	By having someone like a member of the Operation Team write in the chat first, create an atmosphere and flow that makes it easy for students to write in as well.
Interaction Between Students	10	Casual Discussion	During class, make some time where students can casually talk about their impressions about the class and share their thoughts and questions to each other.

	11	Conversation Starter	Set simple rules that determine the order in which students speak when they are divided into small groups, and so that conversations can start naturally.
	12	Familiar Members	If you have small group discussions several times during the class, make sure students are put into the same group every time.

#### CREATING A NEW FORM OF LEARNING

Group	No.	Pattern Name	Summary
Making the Most of Separated Environments	13	Discovering in Proximity	Taking advantage of the fact that students are taking class from different places, have them bring and share anything from what they have around them and any discoveries to learn from each other.
	14	Close Reality from Afar	Show and tell about the region and environment from where you, guest speaker(s), and others are now, so that students can experience and feel the reality of it.
	15	Benefits of Anonymity	By introducing a trick or tool that allows writing to be done anonymously, a way of communication that would never be possible in a real classroom can be created.
Designing Learning Through the Infosphere	16	Creating on the Spot	Share the processes of creating on the computer, yourself drawing, or others in real time so that students can experience and enjoy the perspective of the creator.
	17	Parallel Rooms	In instances like when students are presenting in groups, divide the group into a number of breakout rooms so that all members can have an opportunity to present.
	18	Others' Thoughts	Make it possible for students to read each others' written comments about the class or assignments and work so that other students' thoughts and feelings can also be materials for learning.
Developing a Whole from Parts	19	Starting Small	When having students discuss with each other, start with a small group of two to our people, and then have them introduce what was said in those small groups to the whole group, so that each person can easily express their honest opinions and small ideas.
	20	By Students for Students	Rather than having teachers prepare teaching materials beforehand, have students create their own learning materials to create learning in the class together.
	21	Snowball Effect	Have students bring in their own insights and discoveries, or create them on the spot, and then weave them together so that they can lead to greater discoveries as a whole.
Beyond the Timetable	22	Asynchronous & Synchronous Mix	Use both asynchronous and synchronous class sessions, having the lecture portion of the class as a video that can be viewed at students' own paces and played back repeatedly, and any questions and groupwork to be done in real time.
	23	Assignment Checkpoints	Limit the time period in which students can watch the lecture video, or have assignments related to the lecture video due by a certain date, so that students

			are encouraged to watch the videos without accumulating them and getting them done last minute.
	24	Additional Clips	Make available additional on-demand lecture videos containing background knowledge, applied content, and follow-up explanations related to the class content so that only students who want to watch them can do so and deepen their learning.

#### BUILDING A SENSE OF BELONGING

Group	No.	Pattern Name	Summary
Creating a Comfortable Place Together	25	Even the slightest	Pick up and respond to every comment even if the comment is just a slight one so that people can feel that they have been noticed and part of the class.
	26	Frequently Incorporating Voices	Incorporate feedback from questionnaires and any voices heard during break time and improve the class by enhancing what is good and improving what needs to be improved.
	27	Class Designers	Involve some or all of the students in creating and designing the class, so that they can create their own sense of belonging where they can be themselves.
Supporting Student's Connections	28	Chit-Chat Closing	After the class, by dividing the students into small breakout rooms, allow them to dismiss naturally after chit-chatting with other students which create an opportunity for casual interaction.
	29	Platform for Conversation	Using online communication tools, create a space where the teacher and all the students can connect even the outside of the classroom and communicate freely at any time.
	30	Small Comfort Zone	By organizing group work with the same members or forming small teams for ongoing engagement throughout the term, create a space where students can share their small everyday worries and feelings, or any questions with each other.
Creating a Memorable Sense of Unity	31	Festive Mode	Produce a memorable and fun time for students by matching their outfits and virtual background themes to seasonal events such as Christmas and Halloween, or by making the final presentations as an attractive event.
	32	Something Special	Mail something special to each student's house, not something that can be shared online, and enjoy the feeling of togetherness of having the same thing at the same time, even online.
	33	Capturing Lively Moments	Photograph and share moments of excitement and emotional moments when you have achieved something together, so that students can remember the events and feelings of those moments.
Virtual Sense of Belonging	34	Drop By Study Hall	By creating a place where each student can work silently on an assignment or other individual task, provide a place where people can concentrate on their own work while feeling the presence of others who are also working on their own tasks.

	35	Remote Office Hours	Hold regular open spaces where students can come casually, and give the students an opportunity to ask questions, discuss and chit-chat.
	36	Virtual Campus	By creating recreated spaces of school and symbolic places on virtual where students can enjoy events and communication that go beyond the classroom, make them feel like they belong to the school.

#### ACKNOWLEDGMENTS

We would like to express our sincere gratitude to the teachers who cooperated in the interviews and to the “Maximizing Awareness and Learning with Students Project” for introducing us to teachers in public schools.

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