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International Research  
and Training Centre  
for Rural Education



# Guidance for Using Technologies and Platforms

Online Education During COVID-19 Pandemic



Supported by Chinese NatCom for UNESCO

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# Guidance for Using Technologies and Platforms

Online Education During COVID\_19 Pandemic

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# Guidance for Using Technologies and Platforms

Online Education During COVID\_19 Pandemic

Center for Higher Education Research, Southern University of Science and Technology  
International Centre for Higher Education Innovation under the auspices of UNESCO

May 31, 2020

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## Preface

As previously reported on the UN News website, the COVID–19 pandemic had forced school closures in 194 countries, affecting at least 1.59 billion students and 63 million primary and secondary teachers. According to UNESCO’s more updated data, as of May 30, 2020, the nation–wide school closures alone enforced in 150 countries had already kept more than 1.19 billion students out of schools, accounting for 68% of the world’s total enrolled learners. Though the world has achieved some improvement in flattening the curve of the pandemic, its sweeping impact shows no sign of abating. Schools are still closed, and students are not returning to their classrooms yet. Alternatively, online education has become a solution to secure uninterrupted schooling.

In countries and regions where there is no access barrier to the Internet, the benefit of online education is obvious. It enables schools to deliver courses online so that teachers can offer instructions, share learning resources, give quizzes, and even organize thesis oral defenses. The stay–at–home learning and working modes have increased the time shared between parents and their children, making parents’ active engagement in supporting children’s online learning experiences and communities’ involvement in creating a favorable learning environment possible.

To maximize the value of online education during the pandemic, the Online Education During COVID–19 Pandemic – Guidance for Technologies and Platforms has been developed by UNESCO ICHEI, Southern University of Science and Technology, the UNESCO Institute for Information Technologies in Education (UNESCO IITE), and the UNESCO International Research and Training Centre for Rural Education (UNESCO INRULED) with the support from the National Commission of China for UNESCO. The members of the editorial panel are from Chinese higher education institutions, including Southern University of Science and Technology, Beijing Normal University, South China Normal University, and Foshan University, Guangdong Center for Educational Technology, without whom it would not be possible to accomplish this guide within such a short time.

We hope that this online education guide series can serve as a navigator for the people who might be interested or engaged in online education practice in the post–pandemic era. We also hope that the crisis would be overcome soon and that schools would be reopened so that students and teachers could continue their learning and teaching in a healthy and comfortable environment. We are looking forward to a better future for all humankind!



- Dr. Ming Li  
Director of UNESCO ICHEI



- Dr. Tao Zhan  
Director of UNESCO IITE



- Dr. Ronghuai Huang  
Director of UNESCO INRULED



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# CONTENTS

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<b>1</b>	<b>Modes of Online Learning</b>	01
1.1	Tutorial instructions	01
1.2	Interaction and discussion	02
1.3	Instructional management	02
1.4	Resources management	03
1.5	Assignment grading	03
<b>2</b>	<b>Online Learning Technologies and Solutions</b>	04
2.1	Live webcasting	04
2.2	Online learning management systems	04
2.3	MOOCs	05
2.4	Features and functionalities of different online learning solutions	06
<b>3</b>	<b>Popular Solutions: Features and User Instruction</b>	07
3.1	DingTalk	07
3.2	ZOOM	09
3.3	Skype	11
3.4	Blackboard	13
3.5	Moodle	14
3.6	Google Classroom	16
3.7	Coursera	17
3.8	Music Tree	18
<b>4</b>	<b>Extra Solutions and Resources</b>	21
4.1	Digital solutions	21
4.2	Resource repositories	22

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According to the statistics published on UNESCO's website, as of May 18, 2020, 156 countries had implemented nationwide school closures in response to the COVID-19 pandemic, which had affected 1,210,295,995 learners worldwide, accounting for 69.1% of all enrolled students. Localized closures enforced in other places have added even greater gravity to the impact. Distance learning, also known as online learning or e-learning, thus, has become an alternative for countries around the globe to ensure uninterrupted learning when classes are disrupted.

While embracing its first wave of global application, online learning is also lending its support to students with disabilities by offering them better access to information and education. Open education resources, free open-source software (FOSS), open-access data, and live-streamed classes enabled by e-learning solution providers have removed various barriers that have prevented them from accessing learning opportunities, such as long commuting distance from educational institutions, sensory impairment (e.g., vision or hearing impairment), mobility difficulties (e.g., physical disabilities), gender bias, and high costs.






# 1 Modes of Online Learning

Under the impact of the pandemic, instructors worldwide have adopted various online teaching technologies and platforms to deliver live-streamed lectures, involve students in interactions and discussions, track the learning activities, and assign online tests to ensure and improve the effectiveness of online education.

## 1.1 Tutorial instructions

In online learning, lectures can be delivered through live webcasting, video on demand, and video conferencing. Different modes support different teaching and learning activities.

Modes of Course Delivery	
 <p>Live Video Webcasting</p>	<ul style="list-style-type: none"> <li>• Live video class enables both tutorial instructions and Q&amp;A sessions hosted by instructors.</li> <li>• Instructors can deliver their lectures via screen sharing. Students can interact with the instructor through the features such as chat box or mic linking.</li> <li>• Video playback is supported.</li> </ul>
 <p>Video on Demand</p>	<ul style="list-style-type: none"> <li>• Instructors can upload pre-recorded videos of their lectures for students to watch during online sessions. It is a one-way teaching mode.</li> <li>• It allows off-peak use of the network for online learning to prevent the interruption by network latency.</li> <li>• Video playback is supported.</li> </ul>
 <p>Video Conferencing</p>	<ul style="list-style-type: none"> <li>• Teaching activities such as tutorial instructions, Q&amp;As and group presentations are supported.</li> <li>• Both instructors and students can share their screens for real-time interactions.</li> <li>• Conference recording is supported.</li> </ul>

## 1.2 Interaction and discussion

The interactions and discussions between instructors and students, or among students in an online class, can be achieved through video/audio-based webinars, text-based real-time interactions, and learner community-based asynchronous interactions. Each shows distinctive features and benefits.

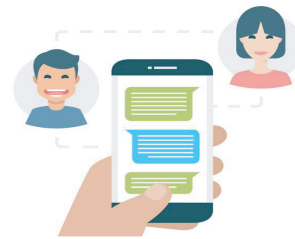


### Video/audio-based Webinars

- Screen sharing by both instructors and students;
- Real-time, active interactions between instructors and students or among students;
- Group presentations.

### Text-based Real-time Interactions

- Publishing course information and learning tasks by instructors.
- Real-time, less dynamic interactions between instructors and students or among students;

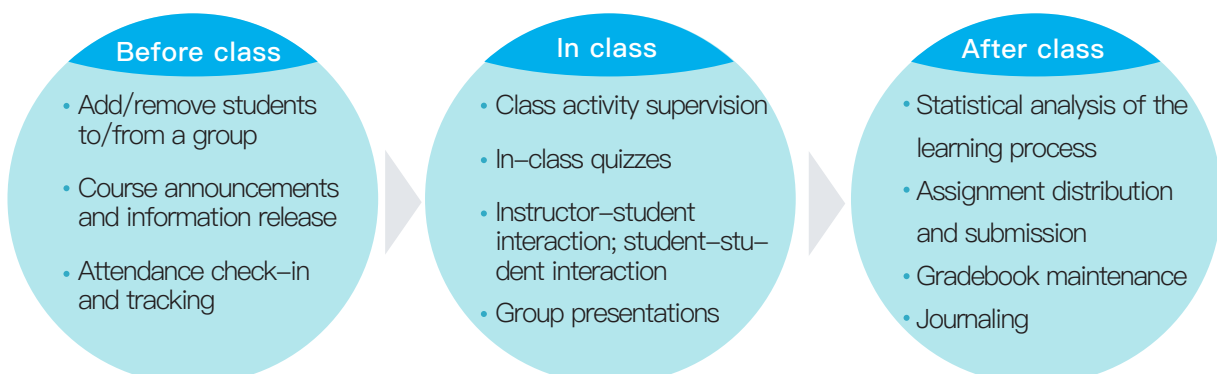


### Learner Community-based Asynchronous Interactions

- Discussion through posting under defined topics.
- The discussion can be synchronous when both instructors and students are online.

## 1.3 Instructional management

Robust instructional management over the online learning process can help to foster good relations between instructors and students and maximize the effectiveness of online learning. Specific management activities occur in three phases, i.e., before class, in class, and after class, and different priorities should be set.





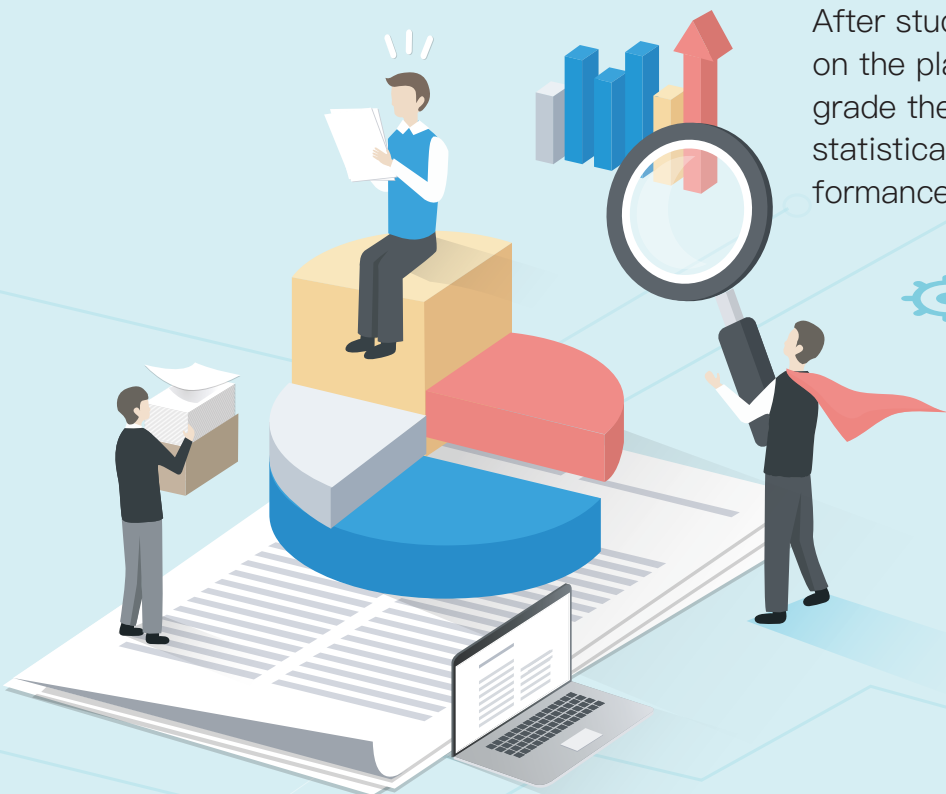
## 1.4 Resources management

The resources generated from online teaching activities are extremely valuable, comprising of a large volume of data in diverse varieties to be transmitted frequently between the instructors and students. Such resources include videos, images, documents, and software, which can be effectively managed through uploading, downloading, sharing, co-editing, category-based storage, cloud-based storage, and inquiry, and searching.



## 1.5 Assignment grading

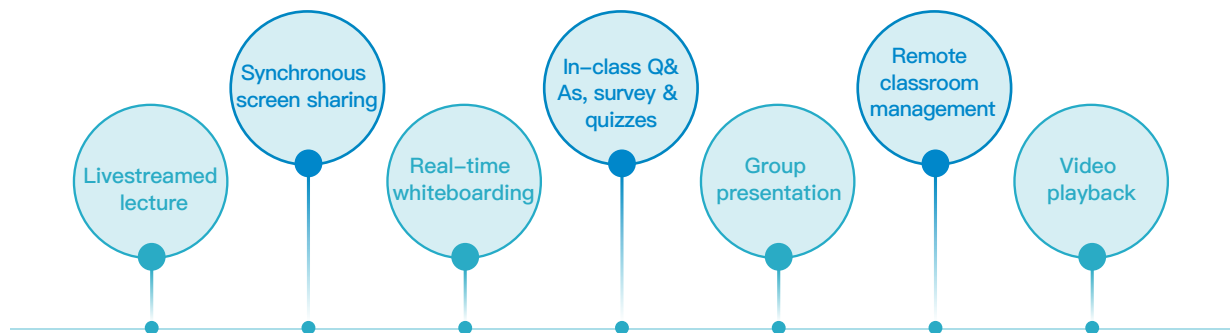
Assignment is an essential tool for instructors to evaluate whether teaching objectives are achieved or not. In the setting of online learning, students' assignments mainly include pre-class assignments, coursework for knowledge consolidation, online discussion tasks, and group collaborative learning tasks. After students upload their assignments on the platforms, the instructors can grade their assignments online, run the statistical report, and analyze the performance of their students.



## 2 Online Learning Technologies and Solutions

### 2.1 Live webcasting

The most used live webcasting platforms for online learning are DingTalk, ZOOM, Skype, Lark, Teams, Tencent Meeting, Xuefenyi, Zhidao, CCTalk, and SEEVO. These platforms enable instructors to deliver live-streamed courses, host video meetings, share their screens, and record the sessions for future playback. Some of these platforms also support the recording of live video meetings.



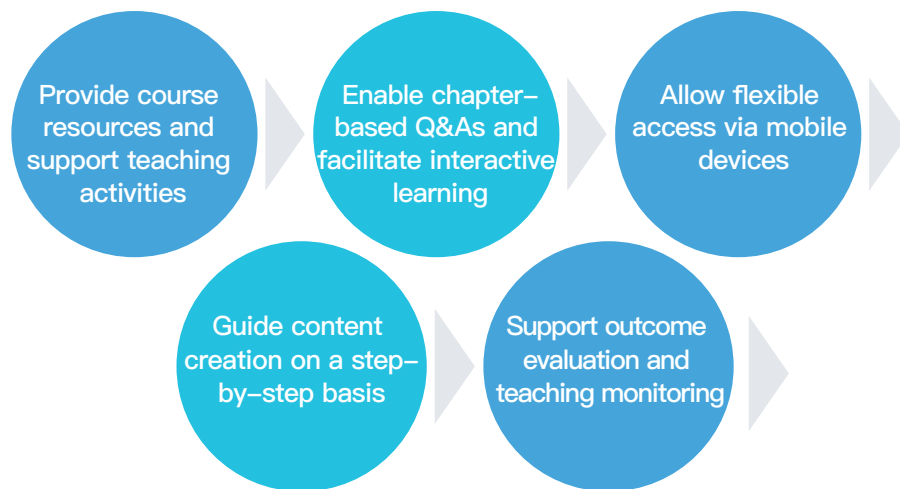
### 2.2 Online learning management systems

Platforms such as Blackboard, Moodle, Google Classroom, Xuetangx, Zhihuishu are well-known online learning management enablers, also known as learning management systems (LMS), which make the design and management of courses and resources possible. Instructors can create their courses and resources on these platforms and involve students in different learning activities. Meanwhile, instructors can extract the data of students' learning activity to make formative and summative assessments on students' learning performance.



### 2.3 MOOCs

Chinese University MOOC Platform, Zhihuishu, Xuetangx, CNMOOC, University Open Online Courses, Coursera, EdX, and Udacity are examples of massive open online course (MOOC) platforms that offer complete course modules for a wide range of subjects and supportive course activities. Instructors can rely on such platforms to guide students' learning if relevant resources are available. More flexible learning scheduling is possible for students to follow the courses at their own pace. For more MOOC resources, please visit Distance Learning Solutions on UNESCO's website: <https://en.unesco.org/covid19/educationresponse/solutions>.



## 2.4 Features and functionalities of different online learning solutions

A comparison of different platforms in terms of their features and functionalities is listed below

Online learning mode	Features	Ding Talk	ZOOM	Skype	Black board	Moodle	Google Classroom	Coursera
Tutorial instructions	Live video webcasting	✓	–	–	–	–	–	–
	Video on demand	✓	–	–	–	–	–	–
	Video conferencing	✓	✓	✓	–	–	–	–
	Recording and playback of live sessions	✓	✓	✓	–	–	–	–
Interactions and discussions	Video/audio-based webinar	✓	✓	✓	–	–	–	–
	Text-based real-time interactions	✓	✓	✓	✓	✓	✓	–
	Community-based asynchronous interactions	–	–	–	✓	✓	✓	✓
	Group discussions	–	✓	–	✓	✓	✓	✓
Online learning management	Adding/removing students to/from a group	✓	–	✓	–	–	–	–
	Course announcements and information release	✓	–	✓	✓	✓	✓	✓
	Attendance check-in and tracking	✓	–	–	–	–	–	–

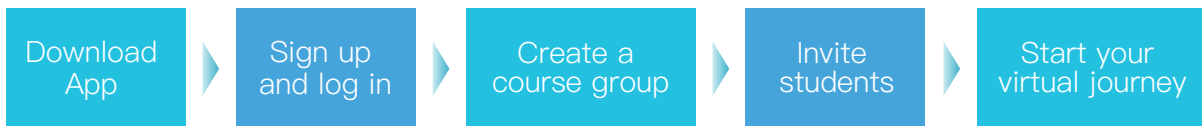
Online learning mode	Features	Ding Talk	ZOOM	Skype	Black board	Moodle	Google Classroom	Coursera
Online learning management	Class activity supervision	✓	—	—	✓	✓	—	✓
	In-class quizzes	✓	—	—	✓	✓	✓	✓
	Instructor–student interaction Student–student interaction	✓	✓	—	✓	✓	✓	✓
	Group presentation	✓	✓	—	✓	✓	✓	—
	Statistical analysis of the learning process	—	—	—	✓	✓	—	✓
	Homework assignment and submission	✓	—	—	✓	✓	✓	✓
	Gradebook maintenance	✓	—	—	✓	✓	✓	✓
	Journaling	✓	—	—	✓	✓	✓	✓
Resources management	Cloud-based storage	✓	—	—	✓	✓	✓	—
	Uploading	✓	—	—	✓	✓	✓	—
	Downloading	✓	—	—	✓	✓	✓	—
	Sharing	✓	—	—	✓	✓	✓	—
	Co-editing	✓	—	—	—	—	✓	—
	Category-based storage	✓	—	—	✓	✓	✓	—
	Searching	✓	—	—	—	—	—	✓
Assignment grading	Online assignment distribution and submission	✓	—	—	✓	✓	✓	✓
	Online assignment grading	✓	—	—	✓	✓	✓	✓

# 3 Popular Solutions: Features and User Instruction

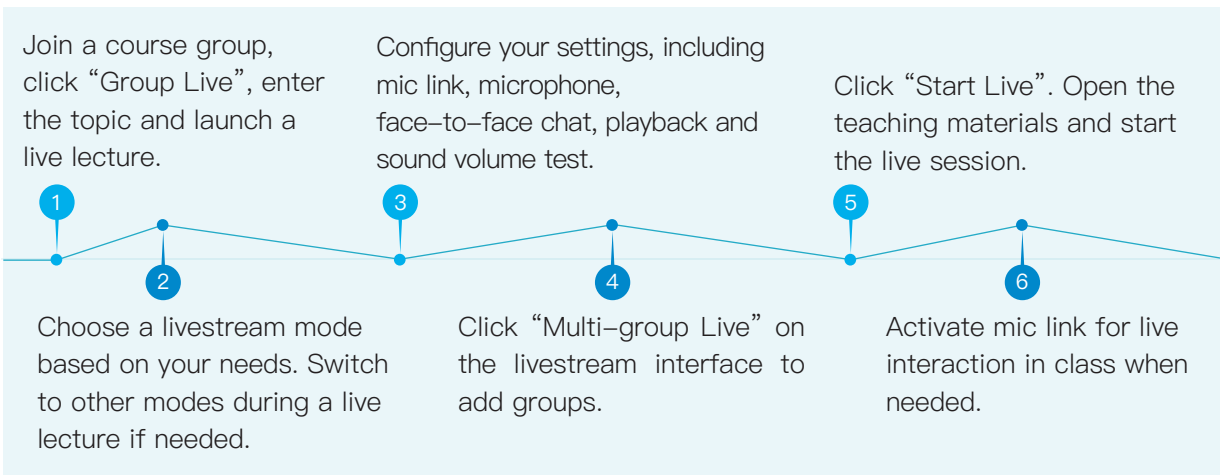
## 3.1 DingTalk

DingTalk, developed by Alibaba Group, is a multi-terminal platform that enables users to communicate and collaborate with others. It supports various teaching activities such as live streaming, on-demand videos, and video conferencing. Instructors can manage and control class activities as well as evaluate students' performance.

### Create an Online Learning Community



### Live Streaming via Computers



### Live Streaming via Mobile Phones



#### Starting Live Streaming

When joining a course group, click “+” to start a group live. You can choose landscape mode or portrait mode and switch between front camera and rear camera.

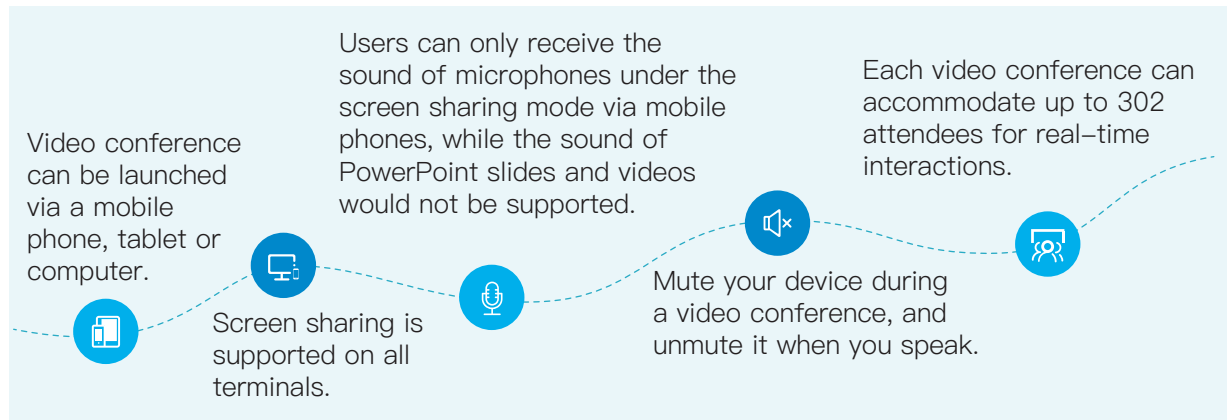


#### Tips

Livestreaming via mobile phones is suitable for courses delivered with white-board/blackboard/flip chart writing and does not support screen sharing. Instructors can upload the slides and other learning materials to a course group so that students can refer to these materials in class.



## Video Conferencing



## Record and Share Course Videos



Do not disable “Record for Playback” when setting up a live session so that a recorded video can be generated immediately after the lecture and made accessible online for playback.



Click “Record” to start recording when a lecture begins. DingTalk will automatically open the folder for video sharing once the session recording finishes.



To pre-record the course, create a new course group to record the videos through live streaming and send the playback to the students for their asynchronous learning.

## Manage Teaching Activities and Resources

### Resources storage:

With DingTalk Drive.

### Co-editing:

With DingTalk Docs.

### Course announcement:

With Group Notice.

### Attendance/Check-in:

Click “Sign in”.



### In-class quizzes:

With “Intelligent Form Filling”.

### Class activities:

“Clock-in” for task release and tracking.

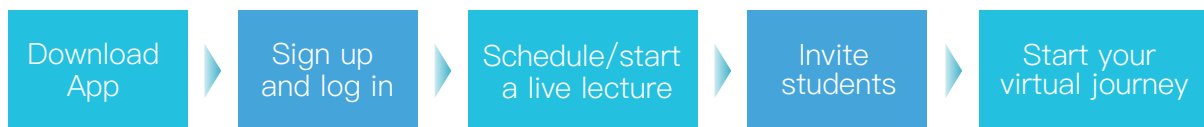
### Assignments/self-reflection:

“Assignment” for instructors to assign homework; “Journal” for self-reflection of both instructors and students.

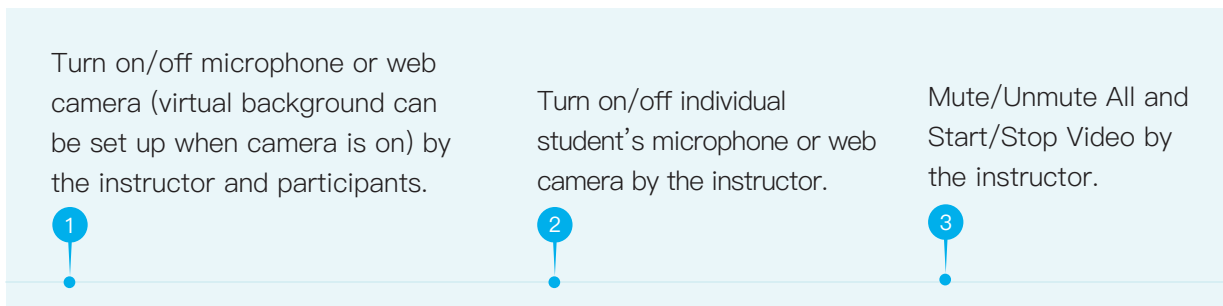
## 3.2 ZOOM

ZOOM is a cloud-based video and phone solution provider, supporting educators with HD online video conferencing on multiple mobile devices. Instructors and students can join online learning activities anytime and anywhere via mobile phones, tablets, and computers for audio or video-based interactions, screen sharing and annotation, in-class discussions, group discussions, and lecture recording.

### Preparation



### Audio or Video-based Interactions



### Screen Sharing and Annotation



#### Screen Sharing

Desktop, Apps, Screen of iPhone/iPad, Whiteboard



#### Tips

It is defaulted that every attendees can annotate during screen sharing. If you do not allow annotation, please configure the settings beforehand. If you need to play videos, please click "sound sharing".



## Group Discussion

The instructor can let the system randomly divide students into different groups or assign them by him/herself. Each group will be allocated by the system with a virtual classroom.

If students have questions, they can invite the instructor to their group for help.

The instructor can join any of these virtual classrooms or move students between groups.

## Record Class Activities and Share Recorded Videos

- When a live lecture begins, the instructor clicks “Record” at the bottom of the screen to record class activities. The recording can be paused or stopped by clicking “Pause/Stop”.
- When a lecture concludes, the recorded video will be automatically converted into the format of mp4 and stored on the hosting computer and can be shared with students.
- If students want to record a meeting, they need to be authorized and approved by the instructor. The instructor can also grant recording authorization to attendees.

## Nonverbal Feedback

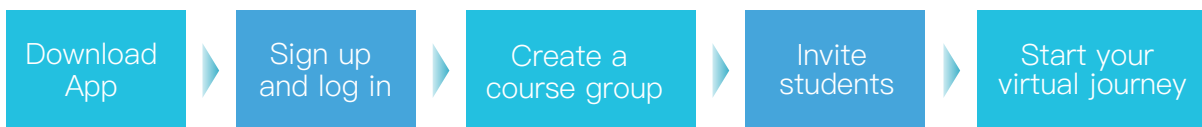
**Nonverbal Feedback**

- Yes
- No
- Go slower
- Go faster
- Applause
- Coffee

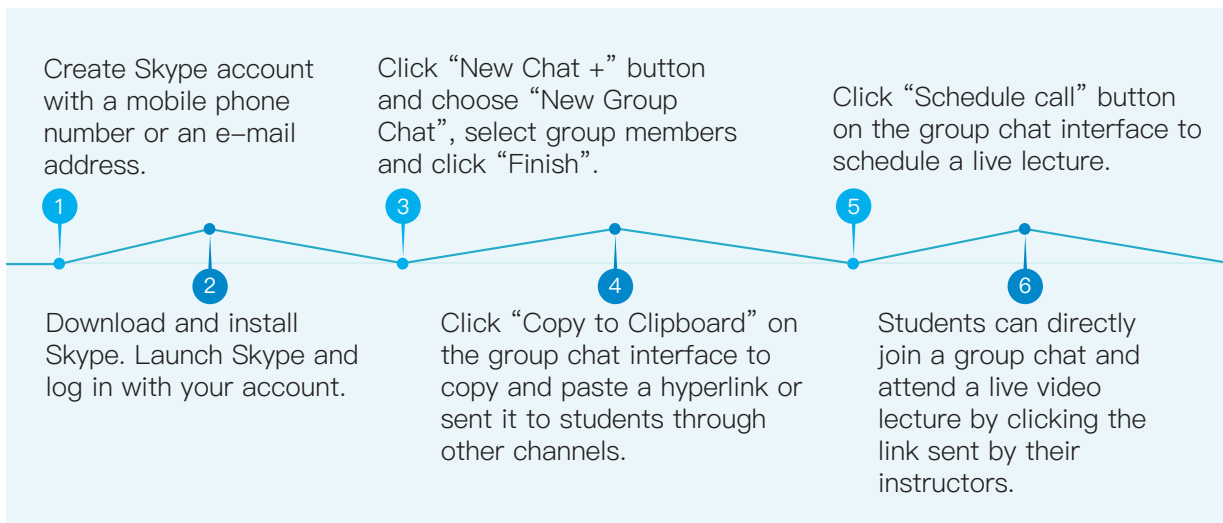
### 3.3 Skype

Skype is an instant communication software offering a wide range of features such as video chat, group audio conferencing, group chat, file transferring, and text messaging. Skype is also an enabler of online learning to support online learning experience with video calls, group chat, file transferring, screen sharing, and polling, which can be a choice for online education programs during the pandemic.

#### Create an Online Learning Community



#### Start a Video Call via Skype



#### Join a Video Call via Skype



##### Launching a call (Instructor)

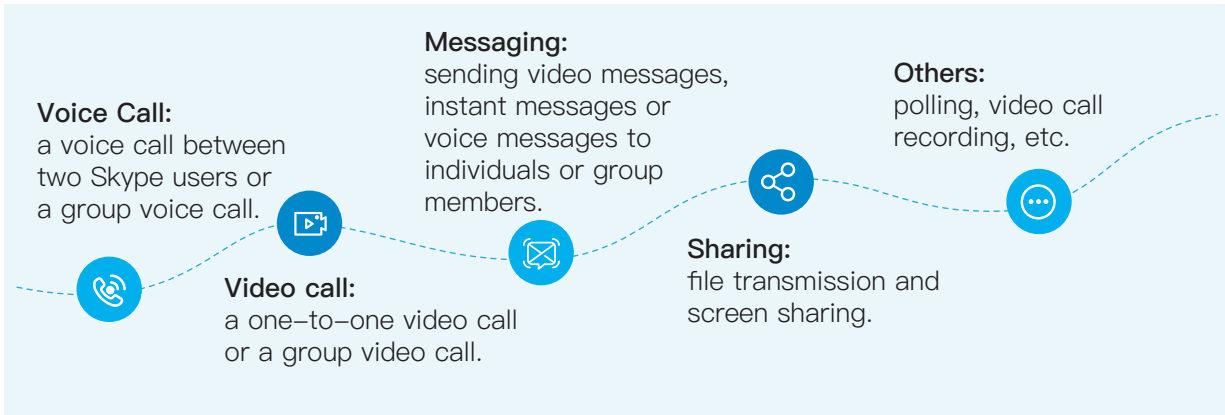
Method 1: select the group members you want to invite when creating a chat group;  
Method 2: click "Invite more" and copy the invitation hyperlink and send it to students.



##### Joining a call (Student)

Method 1: click a conference hyperlink to activate Skype and join the conference;  
Method 2: Click "Join a video call" on the group chat interface to join the conference.

## Main Features



## Recording and Sharing of Course Videos



During a group video call, the instructor can activate “screen sharing” to share his/her screen under windowed or full screen mode.



The instructor or students can use “video call recording” to record a live lecture.



The system will automatically generate a link of the recorded video file with a retention life of 30 days for future playback.

## Teaching and Classroom Management

### Audio settings:

Click the icon of Mic.

### Video settings:

Click the icon of Camera.

### Screen sharing:

Click “Start sharing”.

### Student feedback:

Click the “Heart” icon at the bottom of the interface to use emoticons such as Crying, Like, Surprise, Happy Face, and Star eyes.



### In-class quizzes:

Click “More” and scroll down the menu to click “Polling” to start polling and interact with students.

### Assignments/self-reflection:

Use the feature of “Video message” to submit video assignment.

### In-class discussion:

Click the “Chat” icon to open the chat interface and send emoticons, text messages or documents.



### 3.4 Blackboard

Blackboard provides a virtual environment for instructors and students to support productive and successful online teaching and learning experiences. It allows users to create and manage courses, upload course content (e.g., texts, teaching materials, and videos), participate in interactions and collaborations, give assignments and quizzes, and manage students' grades.

#### Course and Resource Creation and Management

<b>Design a Course</b>	Log in to BB platform. Create a course and start online teaching.
<b>Manage a Course</b>	Add, edit or delete a course on the platform.
<b>Create &amp; Manage Resources</b>	Give, review, grade, and comment on assignments. Upload resources by categories or by course sessions.
<b>Archive &amp; Reuse a Course</b>	Archive your courses. Reuse them in new courses. All courses created and stored can be stored for future reuse.

#### Interactive Teaching

**Online communication:**

Use various teaching tools for teacher-student interactions and collaborative learning.

**Group activities:**

Divide students into groups for group activities and interactions.

**Mobile learning:**

Flexible access from all types of terminals supports resource retrieval, teaching and learning activities, communication, and collaboration.



**Online discussion:**

Organize topic-based discussion for students.



**Student homepage:**

Student homepage is available to support online learning.



#### After-class Assessment and Feedback

**Self and Peer Assessment:**

Instructors allow students to review and assess work by themselves and their peers using criteria provided by their instructors.

**Test grading:**

Instructors can grade tests and upload the results to the platform.

1

**Activity tracking:**

The platform captures students' activity data, including grades, content views, posts, and learning hours.

2

**Assignment grading:**

Instructors can review, grade, and upload assignments.

3

4

**Course evaluation:**

Instructors can run course statistics to check on the curriculum hits and improve their courses accordingly.

5

## Preparation by Instructors



### Course information

Release information including syllabus, introduction, faculty, and teaching schedule.



### Teaching materials

Upload teaching materials including slides, micro–videos, and literatures anytime during a course.



### Exercises

Design and upload self–check exercises and answers for the course.



### References

If readings will be required for a course, list out the books, website links, audio/video materials, and other resources for the course.



### Course navigation and design

Use the course menu for course navigation.

## 3.5 Moodle

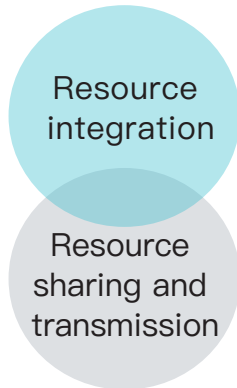
Moodle is both an open–source course management system and a learning management system, providing a virtual learning environment for instructors and students. Instructors can set up and manage their courses on this platform. Other features such as Forum, Quiz, Database, Choice, Survey, Assignments, Chat, and Wiki can help the users maximize their online teaching and learning productivity.

## Course Set Up and Management

- Instructors can design and manage their courses and complete all teaching activities on Moodle. The platform provides over ten features, such as Forum, Quiz, Choice, Survey, Assignments, Chat, and Wiki, to enable flexible delivery of online courses.
- Instructors can track students’ learning progress through such activities as quiz and assignments and adjust course content and schedules accordingly.



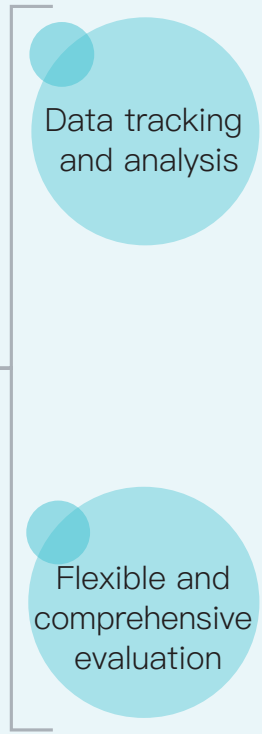
## Content Management and Sharing



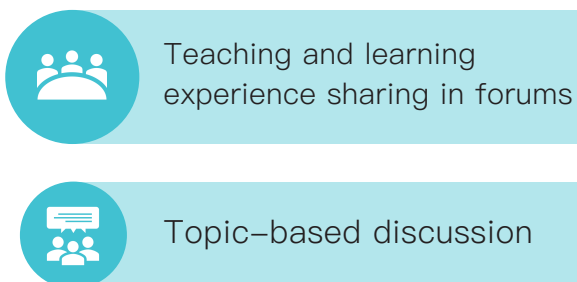
- Moodle supports the setup, management, and sharing and transmission of resources for instructors to embed various resources into their teaching activities (e.g., Word docs, PowerPoint slides, Flash files, and audio/video files).
- Moodle enables learning resource pooling and sharing. Content uploading and sharing are possible for both instructors and students to allow constant expansion of course-related resources and facilitate effective resource sharing.

## Data Tracking and Course Assessment

- Moodle enables instructors to track the learning activities of students and assess their performance. Instructors can run statistical reports on students' activities, including the number of curriculum hits and the timestamps, and check their attendance in specific course modules or teaching activities. Moodle's learning analytics supports downloading of the reports to allow instructors' in-depth offline analysis using spreadsheets.
- Moodle offers a comprehensive, multi-dimensional evaluation feature for the users. The Workshop module enables an interactive evaluation of teaching activities where students can evaluate the work of their peers given by the instructor, and the instructor can manage and grade students' comments. Instructors can also grade with Scales, which can be set in Advanced Grading, and set Grading Method according to the course syllabus and assessment criteria.



## Forum Activity



- Different types of forum communities are available on Moodle with a large active user base.
- Instructors and students can share their teaching and learning experience and methods, exchange ideas on certain topics, and share resources through posts.

### 3.6 Google Classroom

Google Classroom, a product in G Suite for Education, is a cloud-based learning management platform. Instructors can set up and manage their courses, design content, upload teaching materials, and release course resources (e.g., documents and videos) via Google Classroom. They can create, review, and give feedback on students' assignments, as well as initiate online discussions and other teaching activities on the platform. Meanwhile, Google Classroom can seamlessly work with other G Suite tools, such as Google Hangout (a webcasting and collaboration platform), Google Docs (a document co-editing tool), Google Drive (the Cloud Storage service), and Google Calendar, to create a flexible and collaborative virtual learning environment.

#### Preparation



#### Course Content and Learning Resources

<p>Instructors can set the topic of each unit and upload teaching resources. Students can download teaching materials and join a lecture.</p> <p style="text-align: center;"><b>1</b></p>	<p>Course materials can be uploaded from instructors' computers or directly from Google Drive. Instructors can also upload the link of course materials or directly create a new document in Google Docs.</p> <p style="text-align: center;"><b>2</b></p>	<p>Instructors can use "filtering" to upload different teaching materials to different student subgroups based on their academic levels and performance.</p> <p style="text-align: center;"><b>3</b></p>
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#### In-class Discussion



##### Student Involvement

Instructors can release announcements on Stream Tab or post a question as a thread to guide students to discuss or interact with each other, encourage students to post their opinions, and facilitate collaborative learning.



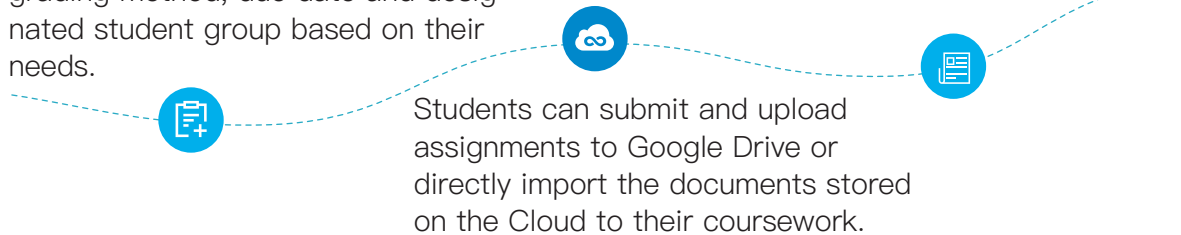
##### Tips

When releasing announcements on Stream Tab, instructors can select a certain student subgroup. They can add attached documents or send announcements immediately or at a scheduled time based on their needs.

## Classwork Assignment and Assessment

Instructors can create and distribute various forms of assignments, and add the name tag, attached documents, grading method, due date and designated student group based on their needs.

Instructors can grade and give feedback on students' assignments, enter the results and overall grades to form a gradebook and generate a formative assessment report.



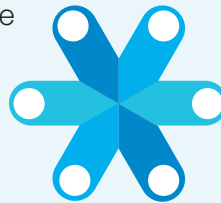
## Time and Resource Management

### Time management:

Google Classroom sets a calendar for each course to document the scheduled time of classes and classwork due dates.

### Resources storage:

Google Classroom enables resources to be stored on Google Drive.



### Course notice:

Notice can be released on Stream Tab on the homepage.

**Co-editing:** With Google Docs.

**In-class quizzes:** With Google Forum.

**Took kits:** Each account gives users an access to G Suite for Education.

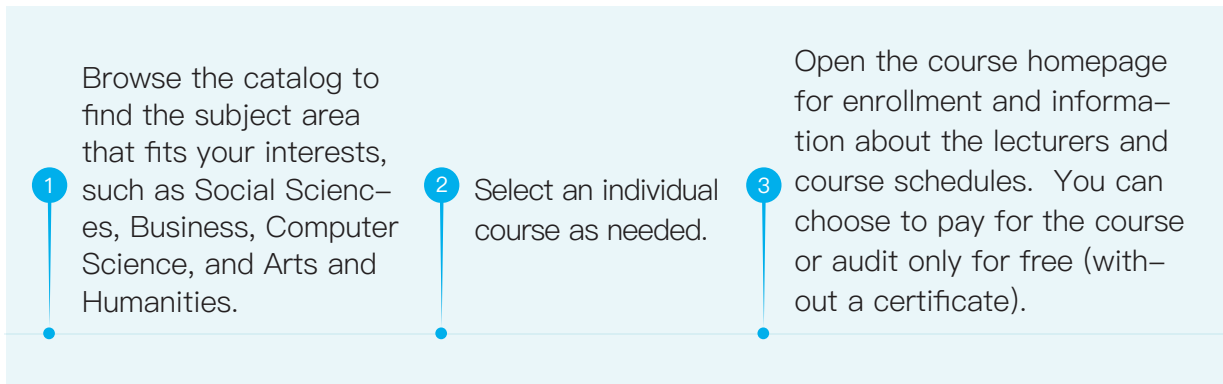
## 3.7 Coursera

Coursera is a large-scale online education platform launched by two professors of Computer Science at Stanford University with the aim to collaborate with leading universities worldwide in offering open courses online. It envisions a world where anyone can improve the life of themselves and their family members and transform their communities by accessing the world's best learning experience.

### Join Coursera



## Enroll in a Course



## Attend a Course Online

### Course overview:

Go to the individual course's information page to review the information, such as the total course hours and other course-specific announcements.

### Progress tracking:

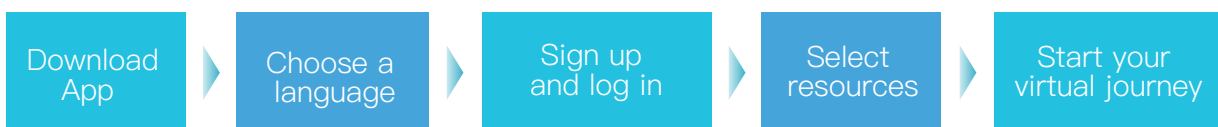
Track your learning progress anytime by checking the remaining video hours and readings, quizzes, deadlines, etc.



## 3.8 Music Tree

Music Tree is a multilingual app to provide music education for children worldwide. Considering the psychological and physiological characteristics of children, Music Tree offers picture books, music games, and creative stories telling and acting games to immerse children in an environment of music.

### The Stay-at-Home Journey of Music



## Content



## Two-terminal Mode



### For schools

Music Tree covers a wide range of content such as stories, children's songs, music and sound resources, music games, and musical instrument learning content.



### For families

Music Tree provides a tailored-content platform for parents to guide their children through independent learning and exploration.

## Features and Modules

### Multilingual resources:

Different languages are available for users to choose from, including Chinese, English, and Russian. The French, Malay and Hindi versions are under development.

### Musical instrument learning:

Virtual musical instruments help children to get more knowledge about music.



### Children's songs:

The catchy songs selected for the activities are perfect matches for children of the targeted age groups.



### Gamification:

Music adventure games help pre-school children develop their interest in music.



## Activities and Services



### Singing:

The platform provides original songs for pre-school children with catchy and simple rhythms tailored for the children's vocal ranges.



**Musical instrument exploration:** This feature provides an opportunity for parents and children to learn about musical instruments while staying at home.



### Music games:

The music-based adventure games are specially designed for children with challenges and hints to stimulate their independent thinking, problem-solving and, summarizing capabilities.

## Highlights

- Enlightening teaching with gamification
- Relaxing learning environment
- Exciting self-exploration journey
- Rich archive of stories
- Melodious music
- Children-friendly design





## 4 Extra Solutions and Resources

### 4.1 Digital solutions

Here are more platforms that you can refer to when you are considering launching your online teaching or learning journey.

For more digital solutions, please visit Distance Learning Solutions on UNESCO's website:

<https://en.unesco.org/covid19/educationresponse/solutions>.


App/ Platform	Features	Official website link
Lark	Lark is committed to the success of organizations and individuals by creating an efficient and pleasant office platform for them. It has a broader offering of features such as Chat (instant messaging), Creation and Cloud Storage, Calendar, Calls and Meetings, and Online Office.	<b>Official Website:</b> <a href="https://www.feishu.cn/">https://www.feishu.cn/</a> <b>Download Link:</b> <a href="https://www.feishu.cn/download">https://www.feishu.cn/download</a>
Teams	Teams supports chatting, collaborating, and meeting anytime and anywhere. It enables users to edit Word, PowerPoint, and Excel documents on a real-time basis.	<b>Official Website:</b> <a href="https://products.office.com/zh-cn/microsoft-teams/group-chat-software">https://products.office.com/zh-cn/microsoft-teams/group-chat-software</a> <b>Download Link:</b> <a href="https://products.office.com/zh-cn/microsoft-teams/download-app">https://products.office.com/zh-cn/microsoft-teams/download-app</a>
Tencent Meeting	Users can join a conference launched on Tencent Meeting with just one click via multiple platforms (e.g., Tencent Meeting App, WeChat Mini Program, and Calendar), or through direct dialing with your phone. The system features HD picture, intelligent ambient noise and keyboard click sound reduction, and high-fidelity voice reproduction. It also offers online document co-editing, real-time screen sharing, and instant text messaging.	<b>Official Website:</b> <a href="https://meeting.tencent.com/index.html">https://meeting.tencent.com/index.html</a> <b>Download Link:</b> <a href="https://meeting.tencent.com/index.html">https://meeting.tencent.com/index.html</a>







App/ Platform	Features	Official website link
CCTalk	CCTalk provides independent teachers and knowledge sharers with perfect online education tools and platform functionalities and creates a collaborative learning community with abundant knowledge and content for learners.	<b>Official Website:</b> <a href="https://www.cctalk.com/">https://www.cctalk.com/</a>  <b>Official Website:</b> <a href="https://www.cctalk.com/download">https://www.cctalk.com/download</a>
ClassIn	ClassIn is committed to creating a professional online classroom in the education industry with multi-disciplinary coverage and multiple scenario support. It covers the whole educational process, including course preparation, teaching, learning, practicing, testing, and assessment. It offers various features such as assignment submission, note-taking, resource sharing via Cloud Disk, screen sharing between instructors and students or among students,	<b>Official Website:</b> <a href="http://www.eeo.cn/">http://www.eeo.cn/</a>  <b>Download Link:</b> <a href="http://www.eeo.cn/cn/download.html">http://www.eeo.cn/cn/download.html</a>

## 4.2 Resource repositories

The resource repositories recommended in this section also support online teaching and learning.

For more resource repositories, please visit Distance Learning Solutions on UNESCO's website: <https://en.unesco.org/covid19/educationresponse/solutions>.

Resource repository	Features	Official website link
 Reading Bear	Reading Bear is the first freely accessible program online. While using innovative rich media, it systematically introduces all the phonetic patterns of written English and, at the same time, teaches beginning readers vocabulary and concepts.	<a href="https://www.reading-bear.org/">https://www.reading-bear.org/</a>

Resource repository	Features	Official website link
 Kids World Fun	Kids World Fun is an English reading online portal for kids. It aims to provide kids with interesting, informative, enlightening, and inspirational reading materials to enrich their learning and daily life!	<a href="https://www.kidsworldfun.com/">https://www.kidsworldfun.com/</a>
 Children's Library	ICDL Foundation aspires to provide the best children's literature to cultivate every child worldwide into an active member of the international community, meaning that they are open to and respect different cultures, languages, and concepts. It is freely accessible to the public.	<a href="http://en.childrenslibrary.org/">http://en.childrenslibrary.org/</a>
 Khan Academy	Khan Academy is a non-profitable educational organization with the stated mission to provide free and world-class education for anyone, anywhere via online video lectures. Learners can find a wide range of subjects, including mathematics, history, finance, physics, chemistry, biology, astronomy, and more.	<a href="https://www.khanacademy.org/">https://www.khanacademy.org/</a>
 KitKit School	KitKit School is a tablet-based learning tool with a comprehensive curriculum that spans early childhood through early elementary.	<a href="http://kitkitschool.com/">http://kitkitschool.com/</a>
 edX	edX is a large-scale open online course platform founded by the Massachusetts Institute of Technology (MIT) and Harvard University in April 2012. It provides free college-level online courses for the general public.	<a href="https://www.edx.org/">https://www.edx.org/</a>
 Udacity	Udacity is an online education platform with 9 million users. Instructors of this organization lecture in English. Udacity not only provides video resources, but also has its own learning management system (LMS), which is embedded with programming interfaces, forums, and social elements.	<a href="https://www.udacity.com/">https://www.udacity.com/</a>