

# Effective Online Training: Approaches and Recommendations

*Draft (August 2023)*

This document is a first contribution to the work of the GIST task team 2 (*Online gateway and e-learning community of practice*) on item2 : “Consider development of a guidance on remote training approaches. share experiences on approaches to remote trainings”.

Many reports, articles, toolkits and guides have been published recently to help develop high quality online courses in different formats, different lengths and for a diverse population of learners.<sup>1</sup> Moreover, the COVID-19 pandemic led many training institutions to adapt by shifting to virtual or online trainings. This shift is not easy as the pedagogical basis of online trainings is different from in-person classes. Exploring new ways to learn online, statistical training institutes have developed a variety of pedagogical resources and have experimented with new online activities. This paper presents practices (good or challenging) of online training, as well as feedback and possible paths for improving these practices collected from experiences and research over the web.

## 1. Remote Training Approaches

There are as many approaches to online training as there are training institutes and courses, grouped under the umbrella of e-learning or online training, whether these courses are synchronous or asynchronous, facilitated or self-paced, delivered using a specific Learning Management System (LMS) or through a simple video-conferencing tool, and whatever the duration from a few hours to several weeks. The learning objectives can also vary significantly from simple awareness courses where the main objectives fall under the “knowledge” category in Bloom’s taxonomy or whether the aim is fostering “skills and abilities”, requiring an active

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<sup>1</sup> See *e.g.*, the excellent “E-learning methodologies and good practices (second edition)”, (FAO) <https://www.fao.org/3/i2516e/i2516e.pdf>

participation and a strong engagement from the learners.<sup>2</sup> We can thus observe a diversity of courses that propose either a listening-and-responding type of activity or, courses focusing on practice embedding hands-on, or projects.

We propose here some thought and feedback collected from the SIAP's lecturers' experience.<sup>3</sup>

## 1.A. Facilitated courses

Facilitated courses can be defined as courses with a predefined pace with regular and direct interactions between lecturer(s) and/or facilitators and learners through the LMS or via online webinars.

The use of interactive elements is a common practice in facilitated courses, this includes the use of:

- Interactive slides
- Videos with or without formative assessment
- Animates
- Polls
- Quizzes
- Q&A
- Forums

The technology used to create these pedagogical activities may be quite costly. Thus developing interactive pedagogical activities should be considered as investments for courses that will be repeated. In particular the use of Sharable Content Object Reference Model (SCORM) packages created from external software is becoming a standard to create interactions in the form of quizzes with specific feedback. Since changes to materials may require some knowledge in the technology used as well as an access to software's licenses, courses developed only with Articulate should be thought through thoroughly and used only for courses not requiring regular updates or modifications over time. It must be noted that the technology used is not based on open standards and open source<sup>4</sup>.

Many tools are now available for creating webinars aimed at collecting ideas and comments from participants, in particular the use of chats, quizzes and polls is now common. For webinars the chat seems to be the preferred method for questions and answers sessions as it is

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<sup>2</sup> Armstrong, P. (2010). Bloom's Taxonomy. Vanderbilt University Center for Teaching.

<https://cft.vanderbilt.edu/guides-sub-pages/blooms-taxonomy/>

<sup>3</sup> Despite our efforts, we have not been able to collect experiences from other members of the GIST.

<sup>4</sup> See "Principles for Digital Development" (The Digital Principles Forum) <https://digitalprinciples.org/>

more efficient and more reliable than direct oral questions, prone to bad sound quality or to difficulties for the participant to address the question in concise or intelligible way. It is also easier for a webinar presenter or for a facilitator to group similar questions and address them in a bundle. When the number of participants is great, it is useful to have a facilitator in charge of gathering the questions for the presenter(s).

The use of polls or contests has proven to be an efficient way to connect with participants and collect information on their awareness or knowledge on specific topics. Some common external poll applications are:

- Mentimeter (<https://www.mentimeter.com/>)
- Kahoot (<https://kahoot.com/>)

These platforms using gamification techniques are quite appreciated by participants. However, polls can also be done within the webinar platform using integrated tools (Zoom) or apps (TEAMS).

When the learning objectives of a webinar includes applying a method or creating a document, the use of certain external platforms or boards proved to be helpful for sharing documents among participants. Some such external platforms are:

- Padlets (<https://padlet.com/>)
- Miro (<https://miro.com/>)

As the latter platform requires an account, this activity has to be planned and advertised in advance to avoid delays due to registration from the participants. The use of these tools can be combined with sessions dividing the participants in several breakout rooms.

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## 1.B. Self-paced trainings

Unlike facilitated courses, self-paced courses do not require any synchronized activities with participants, even if some asynchronous interactions can be organized through forums, polls, or through an organized mechanism to collect contributions to the global knowledge (wiki-like activities, document uploads, links sharing, ...).

Self-paced courses require that all activities are well aligned with the global objectives since the activities are essentially conducted by the learners themselves without additional intervention nor regular monitoring of the activities by the lecturer(s). Moreover, the quality of each activity, in terms of interactivity and technical features should be assessed carefully as these courses are deployed without dedicated monitoring. Summative assessments are also more limited in their form and do not allow peer-reviewed or collaborative work among participants that connect asynchronously to the platform. This limits the learning objectives to those that can be assessed through the usual range of multiple-choice question (MCQ)-type of quizzes.

The duration of self-paced courses depends entirely on learners who may achieve the course in a very short amount of time, or, on the contrary in the long run. As for facilitated courses, self-paced courses may propose certificates, either module by module or for the entire course. UN SIAP has recently increased its portfolio of self-paced courses delivering completion certificates for learners passing the final exam.

Even if these courses do not follow a pace, and even if this may be difficult, it is still important to monitor the activities of the participants on the platform and to encourage active learners using some of the tools available on the e-learning platform (emails, announcements, reminders, ...). As the motivation of a learner in a self-paced course can diminish over time. Also, if (asynchronous) forums, polls or other social learning activities are proposed, it is important to regularly check that the discussions and messages are well connected to the course and are all benevolent.

### 1.C. Massive Open Online Courses (MOOC)

Even if MOOC courses – that is courses with a large number of participants - can be either facilitated or self-paced, we believe that they present specific features that should be addressed separately. In particular, due to the number of participants, many tasks need to be organized to avoid direct interactions with lecturers, even if a facilitation process can be organized.

The resources that can be used in an online course with many participants must be thought to scale up smoothly and autonomously. This concerns the LMS but also the registration process and any external tools that may have some limitations in terms of the number of simultaneous users. In particular, the platform used for webinars or for external activities or exercises.<sup>5</sup> In the case of a paced or facilitated MOOC course, the number of simultaneous connections and interactions between learners can be beneficial to learners and help develop a social learning experience.<sup>6</sup> Peer-reviewed activities, where individual projects are reviewed and quoted by other learners, can be useful pedagogical tools when the number of participants is large. Again, hands-on projects and other activities requiring practice and have to be very precisely defined to avoid any misunderstanding or need for clarification questions. The whole reviewing process should be unambiguous as well, to avoid any frustrations or complaints. It is advised to have

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<sup>5</sup> Zoom (<https://zoom.us/>) typically has limitations for its Free plan (100 users), its Business plan (300 users) and its Enterprise plan (500 users) .

<sup>6</sup> See “The power of social learning: an effective way to learn” (FutureLearn) <https://www.futurelearn.com/using-futurelearn/why-it-works> or “Social learning approach” (The Humanitarian Leadership Academy) -<https://www.humanitarianleadershipacademy.org/our-learning-approach/social-learning/>

the instructions carefully checked by colleagues or students before starting the course and to have a dry run before opening the module.

For these courses, it could be interesting to hire facilitators that will typically spend 1-2 h/day on the e-learning platform to screen forums and collaborative spaces, with the objective of stimulating or initiating discussions to develop and maintain a dynamic among learners.

Facilitators and lecturers could then reinforce learners' engagement and limit the high attrition rate that these courses generally face.

The table below list the various interactive elements and their characteristics:

Courses' type	Interactive elements available	Characteristics
Facilitated	Webinars Polls Interactive slides Interactive videos Animates Quizzes Q&A Forums	Online courses with a predefined pace and regular direct interactions with the lecturer(s). Somehow lecturer led
Self-paced	Interactive slides Interactive videos Animates Quizzes	Online courses with no imposed timing, duration, or predefined pace. Somehow learner Led
MOOC	Webinars Polls Interactive slides Interactive videos Animates Quizzes Q&A Forums Peer-reviewed exercises	Online courses with a large number of participants where it is difficult to create direct interactions with learners.
Virtual training	Polls Quizzes Q&A Forums Peer-reviewed exercises	Online courses with a small number of participants where direct interactions are encouraged.

*A typology of courses and interactive elements available*

## 2. Challenges of delivering an online training

### 2.A. Heterogeneity in capacity of participants

One of the biggest challenges of online courses relates to the heterogeneity of the audience. This is probably the main difference when comparing online courses with in-person courses. When preparing e-courses, lecturers should develop strategies to quickly smooth that heterogeneity and move all participants to the same level of understanding, skills and interest. Webinars, in particular when an external practitioner is invited to provide hints and practical feedback based on his or her personal experience can be the source of a shared interest regardless of the experience and technical level of the participants. One may also use external resources, and pre-course quizzes to help orient some participants to additional pedagogical resources, facilitating their understanding of prerequisite knowledge and their integration into the course materials. The rapid development of chatbots and AI tools may be a solution for a rapid and effective (re)orientation of learners after a few activities. These tools may be a promising solution towards personal learning.

### 2.B. Engaging a Large Group of Participants

SIAP recently moved from a restricted number of participants for each NSO to an unlimited participants policy, leading to an impressive increase in the number of participants for some facilitated courses. With this new, and generous policy, came the difficulty of anticipating the number of learners and thus the uncertainty in the evaluation of lecturers' workload and the pressure on online pedagogical tools. It may be good to assume a large number of participants by default so that the pedagogical resources can be planned in advance.<sup>7</sup> This practice, and its associated constraints, helps in the design of the course that must take into account any possible issue or request. In particular, since individual request or problems should be avoided, documenting the evaluation process and standards for passing the exam is extremely important and avoids facing avalanche of messages requesting clarifications and individual adjustments.

### 2.C. Unknown Motivation of Participants

Another issue concerns the motivations for participating in a particular course which is also not well-known ex-ante and remains largely unknown to the lecturer(s) and facilitators if any. Here again, anticipating that the motivations can be very different from one learner to another could help. It must be recognized that some participants may follow different learning paths depending on their current position and interest. Some courses use personas<sup>8</sup> (fictional

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<sup>7</sup> See "Design for scale" in "Principles for Digital Development" (The Digital Principles Forum) <https://digitalprinciples.org/principle/design-for-scale/>

<sup>8</sup> See [https://thelearningcoach.com/elearning\\_design/audience/learner-personas-for-elearning/](https://thelearningcoach.com/elearning_design/audience/learner-personas-for-elearning/) or Baaki, J., Maddrell, J., & Stauffer, E. (2017). "Designing Authentic and Engaging Personas for Open Education

profiles) that reflects the characteristics of the audience groups to help target participants and design more engaging lessons to discover new ways that learners can construct knowledge. Creating different learning paths can be costly, though, even if simple methods such as defining mandatory *versus* optional activities within a course is a first step in that direction.<sup>10</sup>

## 2.D. Following Learners' Trajectories

Monitoring learners through available or bespoke tools helps understand the learning paths of the learners in the LMS, and can trigger some actions towards sub-populations identified at risk of leaving the course. For example, encouraging messages, with some tips to catch up to the pace of the course can be targeted towards participants who were inactive on the platform for several days.

When no screening of the target population is enforced, participants may be tempted to register without a motivation to finish the course or receive certification. Attrition rate may thus vary depending on many factors that could be analysed using the digital tracks left on the LMS. Different patterns could be observed, the most common is a registration with few appearances on the learning platform. One may also observe that learners that definitively quit the platform (*quitters*) do so at specific points in time or after specific activities, such as at the end of a module (either before or after a test) , or at the end of a week. When a project is proposed as a mandatory exercise, one may observe a partition happening between *quitters* and *finishers*. Even in self-paced courses, (asynchronous) conversations and regular messages from the lecturer can help maintaining a relation with learners and between learners

## 2.E. Collect real-time preferences.

Using LMS data, it is possible to create learners' analytics at different points in time during the course. A well-designed representation of learners' activities over time and over the various modules and activities can help visualize and identify some patterns in the learner's trajectories on the platform. From the course designer's perspective, such information can be a useful element to identify which were the most and less attractive activities as well as analysing the relation between activities viewed or intensity of the effort (time) and learners grades. This information can also help trigger some actions, such as sending clarification messages or creating additional resources or comments during the course.

## 2.F. Creating Common Interest

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Resources Designers". International Journal of Designs for Learning, 8(2).

<https://doi.org/10.14434/ijdl.v8i2.22427>

<sup>10</sup> For some self-paced courses, SIAP has implemented such a typology with a clear definition of mandatory and optional activities within a course using different displays and marks (stars) to differentiate the two types of activities.

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Contributions to the global knowledge through personal experiences, links, documents that can be shared also proved to be quite an effective way of building a community of users having the same references, the same experiences or problems. This type of activity can be integrated as a follow-up to activities where learners introduce themselves (icebreakers), or answer self-reflected questions or polls aimed at creating some common ground interest. This requires that the course is long enough to have time for this construction and for courses where the topic relates closely to daily work tasks or challenges .<sup>11</sup>

### 3. Lessons learned & recommendations

#### A) For training Institutes

##### i. Definition of a course

The definition of a “course” can vary across training institutions ranging from micro-learning or one-day online lecture to several weeks long facilitated courses with or without hands-on, personal projects and homeworks. While SIAP has produced facilitated courses of different durations, it is not clear whether the duration has affected the attrition rate, the engagement of learners or their performance. These issues may be investigated in the future.

##### ii. Creating curricula

With many online courses available, it may be interesting to design curricula on specific topics. UNWOMEN has a clear curriculum of courses and has defined a learner’s path as well as a Training of Trainers. To avoid replication, overlaps and inefficiencies, a global reflection on the articulation of online courses within statistical training institutes could help identify gaps and priorities on emerging fields where courses could be developed.

##### iii. Importance of Learners Analytics

While most courses have a feedback procedure gathering comments and feelings of learners on the course content, its design and its potential impact on actual work, it is important to analyse the revealed preferences of the learners using the digital tracks(data) left on the platform. It is important to analyse these data to have a better idea of the knowledge gained and of the different types of learners that have followed the course . It may also reveal important features of the attrition rate. Both stated (through questionnaires) and revealed (through trajectories) information provides useful insights on the course efficiency and potential impact on learners.

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<sup>11</sup> See “The power of social learning: an effective way to learn” (FutureLearn) <https://www.futurelearn.com/using-futurelearn/why-it-works>



## B) For lecturers

### iv. Create a student account

As a practical recommendation, it may be very useful for a facilitator to create a fake student account, using a secondary email account, to monitor the course from the inside “as if” one was enrolled as a student as the LMS may not display accurately the participant’s view of the activities on the LMS.

### v. Vary the activities

Many different types of online activities are available on Learning Management Systems, some can also be created from external resources or with a simple bespoke webpage. Learners may like variety, as well as repetition of difficult notions with different pedagogical approaches.

### vi. Follow Learner’s Paths

Most LMS collect data from the users and store connections, dates and times, clicks, grades and comments on databases. This information can be useful to collect live snapshots of the learner’s situation, speed and gaps during the course. Experience shows that not all the learners follow a linear path not use the pedagogical activities following the order designed by the lecturer.

### vii. Ask to Review Materials

Unlike face-to-face courses, lecturers cannot adapt the online pedagogical materials that will be used by learners individually. Lecturers may benefit from an external review of the pedagogical material prepared in order to test the speed, efficiency, level and alignment with the learning objectives of any content prepared. This practice is also easier with online materials than with traditional pedagogical support, and this practice should be encouraged.

## Some useful links and references

“E-learning methodologies and good practices, second edition”, (FAO)

<https://www.fao.org/3/i2516e/i2516e.pdf>

“Online learning solutions” (UNITAR) <https://unitar.org/learning-solutions/online-learning-solutions>

“Blended learning methodologies for capacity development” ( Economic and Social entities of the UN Secretariat) <https://drive.google.com/file/d/1MVLScXN8P-o8FKhPbMcwgiTxyFn-DGwn/view>

“Principles for Digital Development” (The Digital Principles Forum) <https://digitalprinciples.org/>

“The power of social learning: an effective way to learn” (FutureLearn)

<https://www.futurelearn.com/using-futurelearn/why-it-works>

“Social learning approach” (The Humanitarian Leadership Academy) -

<https://www.humanitarianleadershipacademy.org/our-learning-approach/social-learning/>

“ITCILO Compass: The right direction for training and learning” (ILO) <https://blog.itcilo.org/the-compass/>

“Designing Authentic and Engaging Personas for Open Education Resources Designers” (2017). Baaki, J., Maddrell, J., & Stauffer, E. International Journal of Designs for Learning, 8(2).

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