Blended learning to support training in climatology in the Andean region

S. Gubler[1], T. Garcia[2], B. Wüthrich[3], M. Adiguzel[4], P. Parrish[4], S. Hunziker[5], K. Sedlmeier[1], E. Villegas[2], E. Yacolca[2], Ch. Spirig[1], C. Schwierz[1]

(1) Federal Office of Meteorology and Climatology MeteoSwiss, Zürich, Switzerland
(2) Servicio Nacional de Meteorología e Hidrología del Perú SENAMHI, Lima, Perú
(3) Sauter GmbH, Schaffhausen, Switzerland
(4) World Meteorological Organization, Geneva, Switzerland
(5) Institute of Geography, University of Berne, Berne, Switzerland

Blended learning is...

a formal education program in which a student learns at least in part through online delivery of content and instruction with some element of student control over time, place, path, and/or pace

and

at least in part at a supervised brick-and-mortar location away from home.

Figure 1: Definition of blended learning (from Staker, H. and Horn, M. B., 2012: Classifyind K-12 blended learning, www.innosightinstitute.org)

Why e-learning?

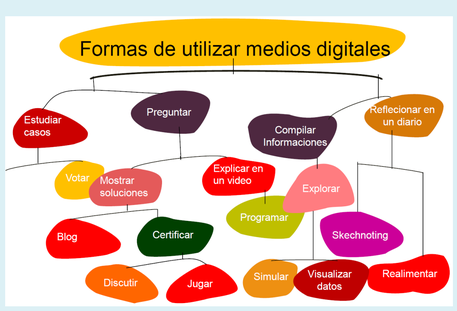

Figure 2: Reflection panel on the use of e-learning as a teaching resource (left) and different forms on how to use digital media in teaching activities (right). This material was used to develop the strategy on the implementation of blended learning at the RTC-Peru.

Development of online training material on climatology

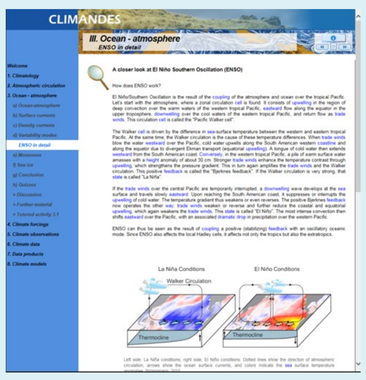

Figure 3: Development of first online material for use at the RTC-Peru (left). The introduction to the material included the conduction of several “train-the-trainers” workshops to instruct trainers of the RTC on how to use the material (right).

Realization of blended courses at RTC-Peru

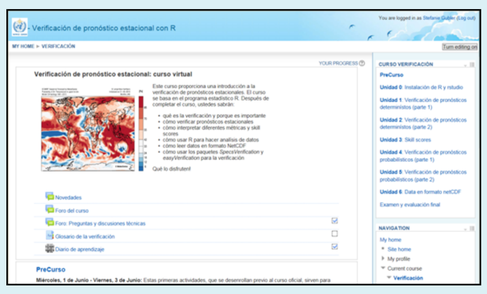

Figure 4: Example of a blended course realized in 2016 on the topic „Verification of seasonal forecasts applying R“. During a three week online course on the WMO-Moodle platform participants were introduced to the main methods for verification (left figure). One month later, the contents were deepened during a one week classroom course taking place in Lima that focused on the application of the methods.

MOTIVATION

The project Climandes supports the WMO Regional Training Center (RTC) in Peru through providing training in climatology to the Andean region. The main goals are:

- Introduction and establishment of e-learning methods at the RTC-Peru (Figs. 1 & 2)
- Provision of specialized training in climatology for professionals and students in the Andean region

To achieve these goals, Climandes has developed online training material on climate related topics (Fig. 3), and is conducting several blended courses for the Andean region (Fig. 4).

RESULTS

- Development of a strategy to implement e-learning at the RTC-Peru (Fig. 2):
  - Introduction to blended learning
  - Definition of main targets and target groups
  - Implementation of a Moodle platform at the RTC
- Planning and realization of several blended courses providing training on climate related topics (Fig. 4) :
  - More than 50 participants from Latin America assisting to online courses on e.g., applications of re-analysis datasets, the production and verification of seasonal forecasts, storage of metadata, etc.
  - Follow-up classroom courses taking place in Lima to deepen and apply the gained knowledge

CHALLENGES

- Time availability of participants during online phase is limited (online courses are attended to in addition to daily business)
- Time required to prepare and supervise online courses is high

CONCLUSIONS

The blended course format has proven to be very successful and efficient in the context of the RTC. Experience has shown that the participants are highly motivated and pleased with the blended approach, allowing them to individually determine their required time for learning, and providing a higher amount of time for practical sessions. Further, both online and residency rooms served as places to mutually exchange social learning experiences.

Contact:
www.meteoswiss.ch/climandes
Stefanie.Gubler@meteoswiss.ch