CASE STUDY

ECMWF: Cloud-based learning solution for weather forecasters

A Virtual College Case Study

ECMWF

The **background**

Established in 1975, the European Centre for Medium-Range Weather Forecasts (ECMWF) is an independent intergovernmental organisation supported by 34 States.

ECMWF is both a research institute and a 24/7 operational service, producing and disseminating numerical weather predictions to its Member States. Based in Reading, ECMWF now employs around 300 staff from more than 30 countries.

The **challenge**

Providing training for Member and Co-operating States is an essential part of what ECMWF does – enabling partners to get the most from ECMWF's computing services, data and to develop an advanced understanding of forecasting.

The extensive learning programme includes face-to-face courses, ad-hoc webinars and a blended course which previously used a limited number of online resources.

ECMWF wanted to have access to e-learning modules to be used in training activities – either as stand-alone modules or as part of other courses. This would help to ease the pressure on those staff involved in delivering training, created by increasing demand, as well as be able to increase the reach out to their user's communities.

In addition to their face-to-face courses, these modules would help ECMWF provide customisable and flexible training initiatives that could, for example, be fitted around shift work.

The potential audience for these training courses is made up of different groups – academics, scientists, forecasters, technical staff and software developers. Each group has different needs: academics and scientists may be interested in the working of numerical weather prediction (NWP) models or the theory underpinning NWP concepts, forecasters in the interpretation and use of meteorological products, whilst technical staff may be interested in software installation and maintenance.

Users of these courses come from different European countries so e-learning would mean that they can easily fit the learning in at a time to suit them without taking days to travel to traditional training sessions.

The web-based material required had to be platform independent and broken into small chunks that could be re-used for different training applications across ECMWF activities. Moreover, it was required to be designed so that the resources could be used 'stand-alone' i.e. the sessions could be undertaken at any time without being diminished by the fact that a lecturer was not present.

The **solution**

Following Virtual College's successful tender bid, workshops were rapidly organised to review content and gather information on the learning objectives for the 12 courses required.

"From the outset, Virtual College engaged well with us to understand our needs so that they could suggest workable solutions," commented Dr Anna Ghelli, International Liaison Officer for ECMWF.

"We liked their pedagogical approach."

ECMWF, by necessity, provided the detailed information required within the courses. Based in Reading, the subject matter experts were often from different countries and the complexity of the material itself, covering topics such as 'Ensemble Forecasting' and 'Parametrization' led Virtual College to use different methodologies and techniques to meet some complex challenges.

Anna continued: "Virtual College's experience of working with different types of subject matter expert was important when accessing the knowledge from different experts with very different personalities and approaches."

In order to minimise any learner language issues, graphics were used extensively with language and text used sparingly and simply.

Highly engaging techniques are employed including screen recordings, simulations, challenges and feedback. A range of different methodologies are used to handle the very high-level technical content.

Virtual College recommended that a similar visual style should be used throughout the modules, ensuring that, whilst separate resources, they had a unifying theme. This was discussed with ECMWF at an early scoping stage, covering the graphics, font and colours etc. to be used, so the modules created would match the client's vision.

Virtual College's in-house content development and design team is highly experienced in developing tailored e-learning for customers.

The content development process of storyboarding, design, early build, review, evaluation and alpha/beta testing is focused on ensuring high-quality end results are achieved, with each aspect of the project tightly managed so that timescales are met and do not drift.
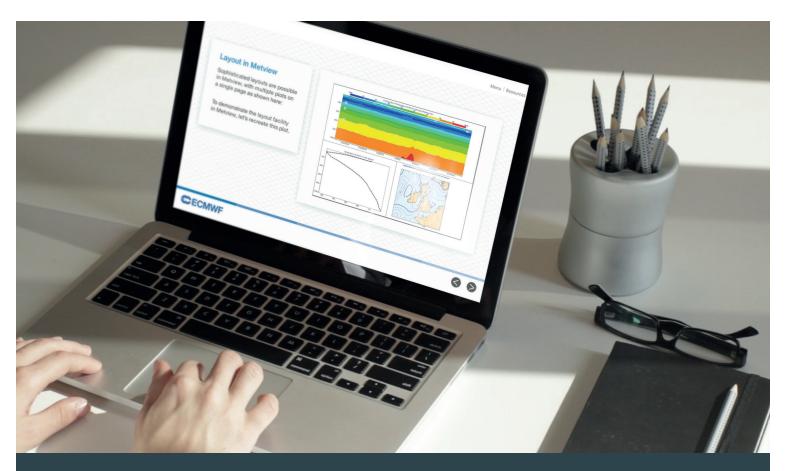
The **results**

Virtual College's approach aims to enhance and enrich the complex and detailed content required for the 12 bespoke modules, using its expertise and experience to make the online learning materials interactive and engaging.

The aim of the online learning resources was to create a blended solution. Online learning is to be used to provide underpinning knowledge to complement face-to-face learning which will have to be revised accordingly.

Anna said: "Users of these courses will mainly come from different European countries, so e-learning means that they can easily fit the learning in at a time to suit them without taking days to travel to traditional training sessions."

The initial success of the relationship has led ECMWF to agree to Virtual College working on a second phase to develop a stand-alone course for people new to ECMWF.

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About Virtual College

With over 2.9 million online learners, Virtual College is one of the leading providers of e-learning in the UK. For over twenty years, we have provided online courses to individuals and companies across the world, breaking down the boundaries of traditional learning to deliver cost-reducing, time-efficient training. Unlike many other e-learning providers, our training extends to actual programme and qualification creation and delivery, resulting in a unique blended solution. The knowledge, experience and feedback that this delivery provides helps ensure that we strive to continually improve our solutions.

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