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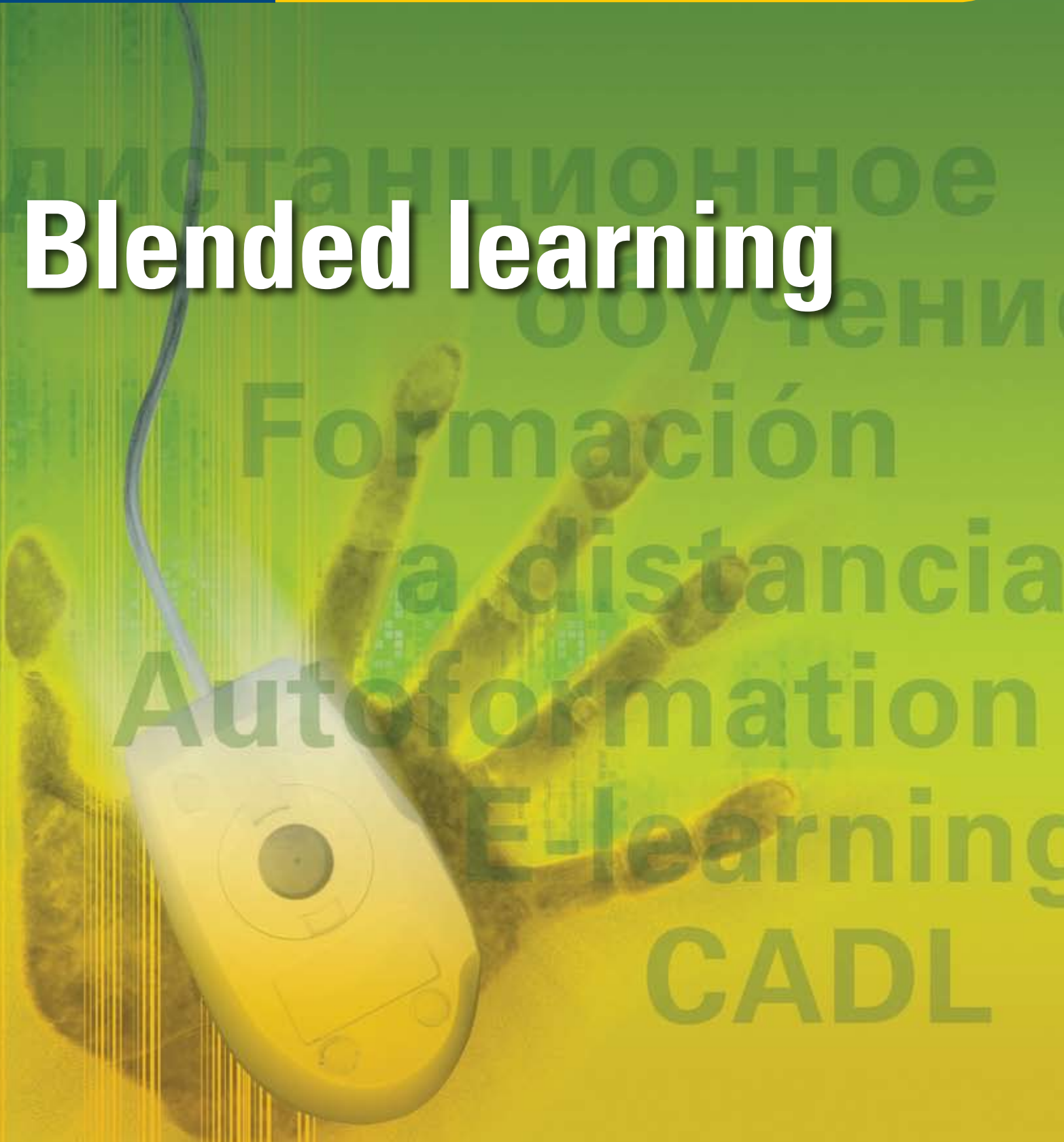
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Bulletin

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Blended learning



To serve the basic learning needs of all requires more than re-commitment to basic education as it now exists. What is needed is an “expanded vision” that surpasses present resource levels, institutional structures, curricula and conventional delivery systems, while building on the best current practices.

(World Declaration on Education for All: Basic Learning Needs,
Article 2, Jomtien, Thailand, 9 March 1990)

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In this issue

Computer-aided distance learning (CADL) is increasingly viewed as the panacea for many challenges facing training providers. It is seen as a means to reduce costs, optimize resources, improve logistics and maximize the learning experience for participants. But are these expectations confirmed by actual experiences? What are the secrets of successful distance-learning activities? What are the prerequisite requirements (e.g. equipment, software, developers' knowledge, skills and time) for the development of really useful training modules; and how do you run effective online learning sessions? This edition of the *WMO Bulletin* attempts to answer these questions.

An address by the President of WMO, Alexander Bedritsky, as is traditional in the issue of the *Bulletin* immediately preceding a session of Congress, is followed by an interview with Bob Riddaway. He describes the many changes in the approach to education and training that he has experienced during his career at the Met Office. These have been focused on improving the efficiency and accessibility of training, as well as the overall quality of the learning experience. CADL is an emerging technique which may fulfil these aspirations.

In order to assess the status of computer-aided distance learning in meteorology and hydrology, WMO organized, in September 2006, a meeting of experts, who warmly debated the benefits and obstacles

to be expected in organizing and following a distance-learning activity. It was subsequently considered that it would be useful to inform the larger WMO community of their experiences and objectives. Most of the authors of the articles in this issue attended that meeting.

An early conclusion of this meeting, which is highlighted by the cover page illustration, was that there is no common understanding nor internationally agreed terminology: terms used include computer-aided learning, distance learning, e-learning, online learning, web-based training, etc. We have therefore tried to respect as much as possible the terms used by each author. Clearly, some degree of harmonization and stability in the utilization of various terms is needed, in order to facilitate international cooperation in the production, exchange and use of training resources.

Heribert Nacken's article provides insight into the concept of e-learning and the underlying theory of how humans learn. This is key to developing effective teaching materials and methods that create a rich and engaging educational experience.

In an article describing the Statistics in Applied Climatology (SIAC) programme, Tom Butcher and Ian Dale explain how the e-SIAC course can be used as a stand alone module or as a prerequisite to much more expensive face-to-face training.

The articles by Abraham Salcedo et al. and Arthur Dania et al. give two excellent—but differently organized—examples of postgraduate blended learning courses in hydrology for Latin American countries and in operational meteorology for the Caribbean region, respectively.

Many people will already be familiar with the High Profile Training Event (HPTE), which offered students from all WMO Regions lectures on the use of satellite data and products. Jeff Wilson and Jim Purdom were part of a team that engaged more than 1 000 people in lectures delivered over the Internet in October 2006.

Rowland Price et al. point out that globalization has created new demands for cross-boundary education. In response, UNESCO-IHE has adapted its educational process to e-learning through an Internet-based platform. An integral component of the system is video-conferencing, which provides interactive links in more than 50 countries. The online course on flood modelling for management is presented as a case-study.

Three articles share national experiences where CADL has proved to be a cost-efficient and effective method of delivering training solutions to large numbers of personnel. COMET (Cooperative Program for Operational Meteorology, Education and Training) is perhaps the best known exponent of e-learning techniques developed in meteorology. Tim Spangler describes

the evolution of COMET, which originated from the need to train more than 7 000 weather forecasters in the USA. Jean Michel Tanguy portrays the development of a training package to quickly qualify a considerable number of flood forecasters in France. He also touches on the issue of trainees' certification. The China Meteorological Administration's requirements for education and training are vast: in 2006, more than 52 000 people participated in e-learning courses, ranging from research into meteorological development strategies to instruction in civil service law. In the article by Fan Hong and Miao Chunsheng, the complexity of developing e-learning modules and the need to create a shared international database of educational resources are explored.

The Eumetcal programme is an excellent example of international collaboration in developing e-learning resources. Training material is shared between 20 European countries, reducing costs and effort required for training delivery. Carola Sundius describes the Eumetcal programme with particular focus on its future direction.

Public education is essential to ensure that weather, climate and water information is used effectively. Michael Glantz suggests that the creation of a "Spare Time University" would provide a pathway to educate

and empower the general public and help to demystify global change science, and make it accessible and usable by the public. While, at first glance, the article may appear rather provocative, given the ever-increasing pace of technological development, its visionary ideas might become reality in a not-too-distant future.

All the articles in this issue of the WMO Bulletin highlight ways in which available computer-aided distance-learning techniques and materials can be exploited effectively to help deliver the training requirements of WMO Members. Whilst costs of developing quality e-learning material are high, WMO can act as a catalyst to coordinate the international effort. This will ensure that duplication is minimized, whilst cooperation and productivity are optimized.

Many of the articles point towards blended learning as being an effective way to train participants. The availability of the Internet and sophistication of information technology now make virtual classrooms and online communities possible in all WMO Regions. Lectures delivered to a small audience in one continent can now benefit a huge audience in another. The WMO Secretariat is drawing on this experience and taking steps to improve the quality, accessibility and efficiency of the training that is delivered to all Members.

As part of the ongoing process at the Secretariat of ensuring the optimal delivery of services to Members, the Regional and Technical Cooperation Activities for Development Department has been re-structured and renamed the Development Cooperation and Regional Activities Department. The underlying reasoning and overall goals of this strategy are presented.

Russell Elsberry sums up recent improvements in tropical cyclone track forecasts in various regions and pathways to further improvements as recommended by the forecasters and researchers at the WMO International Workshop on Tropical Cyclones in San Jose, Costa Rica, in November 2006.

As this issue of the Bulletin was about to go to press, the news was received of the death of Secretary-General Emeritus, Prof. G.O.P. Obasi, in his home country, Nigeria. We were able to obtain an obituary of Prof. Obasi from some eminent personalities who worked with him during his time as Secretary-General and before.